

UPQC is used to increase power quality and customized power.

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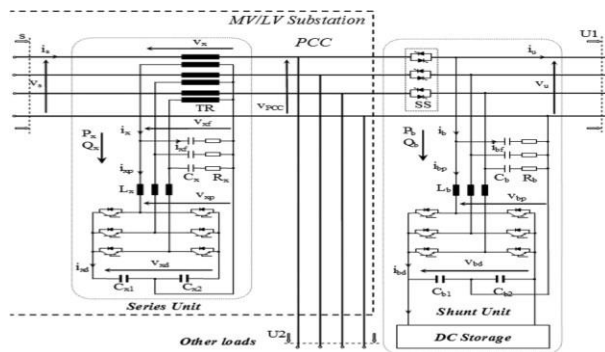
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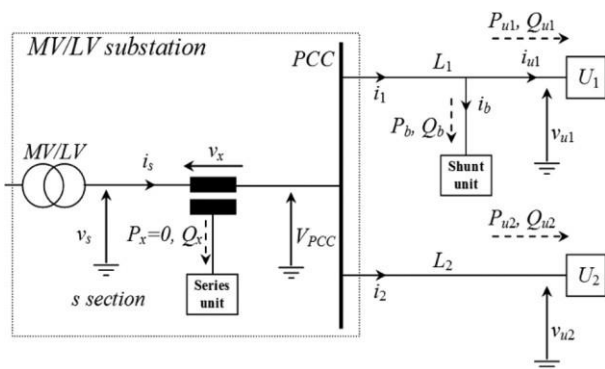
Abstract

There is no conventional DC link on the Series and Shunt units. As a result, their control systems differ slightly from the conventional UPQC control strategies. Additionally, users can receive an improvement in power quality if they purchase the shunt units. All of the clients who supply the main series unit are less disturbed by it. It offers the shunt units to the consumer. A 400-KVA model for the LV grid's proposed solution is taken into account for steady-state performance and functionalizing units. Results obtained under long-term use conditions validate the design choice and excellent device execution.

UPQC PERFORMANCE

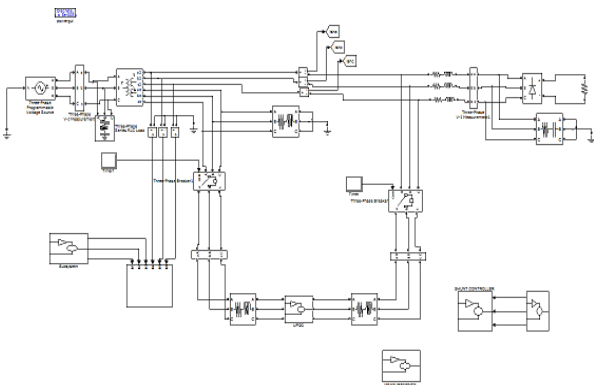


PROPOSED MPPT ALGORITHM

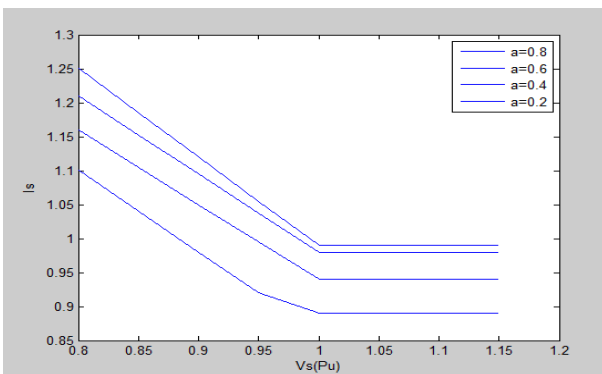


SIMULATION RESULTS

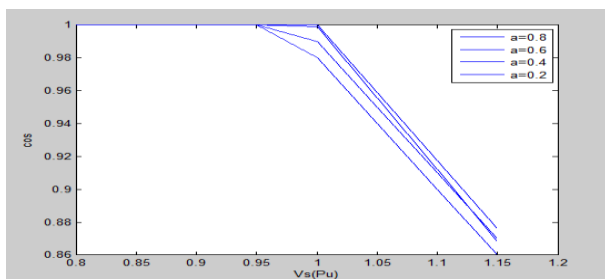
Simulink model of UPQC



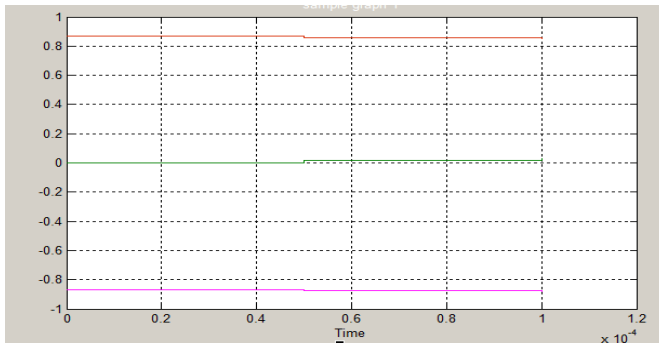
Power factor and maximum line current



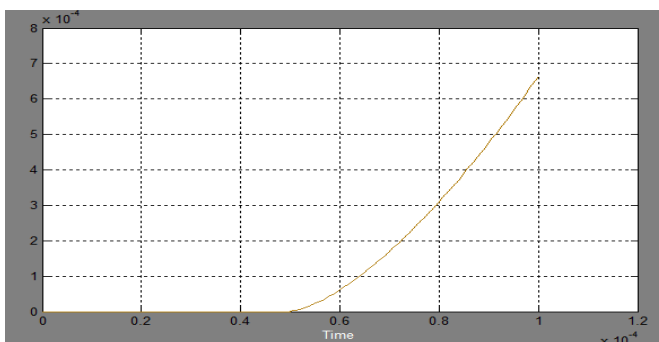
Power factor and maximum line current



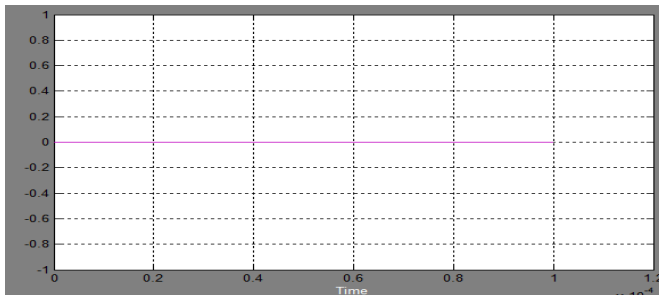
Load vectors



UDC



Power factor



Conclusion

The UPQC and the Power Quality are enhanced by an increase in the percentage of protected Loads. Particularly, the Power Factor U2 is high, while the Power Factor U1 is below 1. It is preferable to place compensation devices (such as UPQC, UPS) close to sensitive loads in this area since Power Factor rises to prevent Non-Active Power. The voltage in the serial unit can be compensated. Electrical distribution operators will be needed in order to improve the Power Quality levels in the sensitive end-users U1.

References

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