

Fig.20 Neutral current using PBT control algorithm.

Also reactive power can be compensated using shunt active power filter with different control algorithms and current controllers as shown in Figs. 21 and 22 respectively.

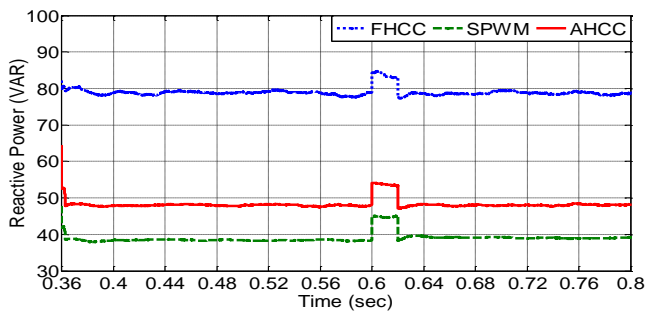


Fig. 21 Reactive power using PBT algorithm with different current controllers.

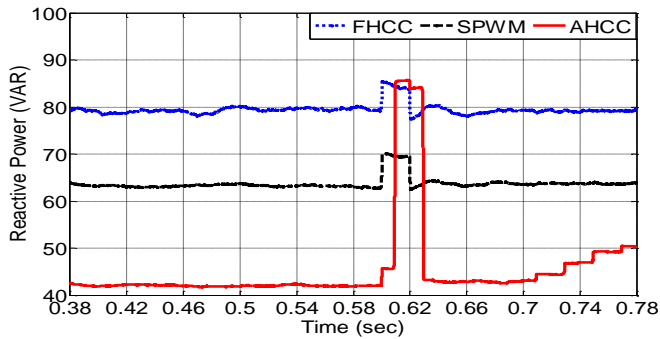


Fig. 22 Reactive power using SRF algorithm with different current controllers.

V. CONCLUSIONS

The control of shunt active power filter has been presented in this paper to enhance the power quality of three phase four wire nonlinear loads. The source current becomes sinusoidal and in phase with voltage, total harmonic distortion below 5% according IEEE standards, reduced reactive power and neutral current near zero. It can be seen that the SPWM current control technique gives the best result in reduction of THD. Also the current in power balance theory becomes sinusoidal faster than SRF.

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