

## 5.06. SYSTEM OF DYNAMIC POWER FACTOR CORRECTION

Automatic system of dynamic power factor correction (ASDPFC) allows to maintain a necessary value of the power factor ( $\cos\varphi=1$ ) in power supply systems with rapidly changing load.



*Control cabinet with ASDPFC*

### *Main functions and technical specifications of the ASDPFC:*

- measurement and control of the power voltage (in one phase) and load currents (in three phases);
- calculation and display of active and reactive power, power factor, voltage and current harmonics (up to 31st), voltage and current distortion coefficients;
- automatic (depending on network load) and manual step-by-step regulation of reactive (capacitive) power (12 degrees);
- accuracy of  $\cos\varphi$  support – not worse than 1%;
- functional readiness to operate in ACSED of any level.

The devices developed in the IED NAS of Ukraine are used as electronic starters PEL-ZE (ПЕЛ-3Е).

### *Consumers' power supply systems with the rapidly changing load that are based on new ASDPFC allows to:*

- improve the voltage quality of supply mains;
- eliminate the changes in the voltage value at sudden changes in load;
- reduce unproductive power losses;
- reduce current load of power switching equipment by extending its service life;
- reduce the cost of electrical equipment maintenance and repair;
- increase the service life of the main and auxiliary electrical equipment.

*The ASDPFC of a total power of 162,5 kVAR and 187,5 kVAR that are used in the main switchboard of the building of television channel "Novyi Kanal", showed their high reliability and efficiency.*