10 Thyristor Controlled Rectifiers

At this point a selection of equipment will be described; they all employ the principle of phase-angle control.

10.1 Type 48 V (60 V)/200 A

10.1.1 General and Application

The rectifier units (cabinet type assembly) serve to supply various communications systems such as EWSD, EWSP, EDX, EDS, KNS, ETS and EMS. Four rectifier units may be switched in parallel which thus cover the power consumption of the communications system and the battery up to 800 A.

The following rectifier units are essential:

- 48 V (60 V)/100 A GR12\(^1\) and
- 48 V (60 V)/200 A GR12\(^1\) (GR121).

Compared to the rectifier units GR12, the rectifier units GR121 have, additionally, a device for battery disconnection (battery undervoltage monitor A16 and battery disconnection contactor K10).

For the units GR12N and GR121N the interference voltage can be reduced even further (from 2.0 mV to 0.5 mV) by increased output filtering. This can be achieved by mounting supplementary filter capacitors (PABX using).

10.1.2 Modes of Operation

The rectifier unit can be used in the rectifier mode (see Sect. 3.1) or in standby parallel mode (see Sect. 3.3).

10.1.3 Survey Diagrams of the Power Supply System

Figure 10.1 shows a basic survey plan of a power supply system for a digital switching system EWSD. The example in the survey plan on Fig. 10.2 represents a power supply system with three rectifier units.

\(^1\) Source: Siemens AG.
Table 10.1 shows the allocation of the rectifier units and switching panels depending on the nominal current of the power supply system. The methods indicated of combining the devices are suggestions requiring the precondition that in each case one rectifier unit is intended for battery charging and, at the