

ABSTRACT

A transforming apparatus automatically adjusting the voltage of three-phase power supply comprising three input terminals, three output terminals, a Y-connection three-phase transformer, a switch group, and a switch switching circuit. The three input terminals are respectively connected to three main lines of the three-phase power supply, and the three output terminals are connected to a load installation. The Y-connection three-phase transformer comprises a core, an R-phase winding circuit, an S-phase winding circuit, and a T-phase winding circuit. In the R-phase winding circuit, an R-phase main winding, an R-phase first auxiliary winding, an R-phase first switch, an R-phase second auxiliary winding, and an R-phase third auxiliary winding are serially connected in that order between the input terminal R_{in} and a neutral point O , the output terminal R_{out} being connected to the other end of the R-phase main winding. An R-phase second switch is connected in parallel with a series circuit of the R-phase first auxiliary winding and the R-phase first switch. An R-phase third switch is connected in parallel with a series circuit of the R-phase first auxiliary winding, the R-phase first switch, and the R-phase second auxiliary winding. An R-phase fourth switch is connected in parallel with a series circuit of the R-phase second auxiliary winding and the R-phase third auxiliary winding. The switch switching circuit controls the switches based on the voltage levels of the

output terminals to switch between first to fourth modes in an alternative manner.