

Rectifier Transformer (Rectiformer)

Ampcontrol's custom designed rectifiers, high power transformers and rectifiers are built for the continuous high loads and occasional system faults associated with typical traction, refining and smelting applications.

In electrolysis operation, rectifiers convert a steady but continuously high loading alternating current into direct current for use in the production process of copper, zinc, magnesium, aluminium and nickel.

Rectifiers incorporate large capsule thyristors normally matched to ensure proper current sharing when connected in parallel mounted on a heat sink designed to allow easy access for maintenance. The heat sink provides suitable insulation between the anode and cathode connections.

High speed semiconductor protection fuses are provided in each parallel leg of each phase for isolating shorted thyristors. Visual indication can be incorporated via a monitoring device to indicate fuse rupture. The entire rectifier unit can be a fixture or manufactured on a withdrawable truck.

The operation of the rectifier is controlled by the double redundant, microprocessor based Integrated Control Electronics Module (ICEM), which controls the firing of the thyristors. The self-monitoring capability of the module provides extensive diagnostics for detection, alarm and display of any fault.

Ampcontrol specialise in system calculation, design, manufacturing and commissioning of high power systems. The high secondary currents and LV bushing arrangements for large units, together with the secondary current harmonics in general, are essential design requirements to manage.

Typical output ratings involve voltages ranging from 30VDC to 1000VDC with currents up to 120,000 Amps per unit.



Features

- + 100% redundancy in the thyristor firing circuits
- + Redundant thyristors – designed for an N-1 operational condition
- + Redundant parallel connected closed loop de-ionised water cooling systems
- + Single way or bridge design
- + Six or twelve pulse operation
- + Microprocessor control using Ampcontrol's Integrated Control Electronics Module
- + Surge and over voltage suppression
- + DC isolating switches
- + Optional harmonic filters available

