APPLICATION

Onshore, Offshore and Marine applications.

A wide and varied range of high quality transformer rectifiers are designed and manufactured at our Grantham works to meet the market requirement for all land and marine structures necessitating an Impressed Current Cathodic Protection system or a Marine Growth Anti Fouling system.

TRANSFORMER RECTIFIER UNIT DATA

The products have been developed to satisfy the most arduous environmental conditions, giving safe operational reliability with minimal maintenance at competitive price levels.

Two main types of transformer rectifiers are available ie: Air Cooled and Oil Cooled, the selection of which may be specification derived or personal choice. The final selection invariably being the environmental conditions and relative to output rating, these will determine the physical size and cost of the unit. Our engineers are able to assist you with this selection.

Input Power Supply  1 Phase and 3 Phase supplies to 660Volts, 50/60Hz are readily catered for within our standard arrangements

Output Rating @  

<table>
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<tr>
<th>Ambient Temperatures</th>
<th>Voltages: 6 to 120Volts DC (British Standards state 50Volts DC output max)</th>
<th>Currents: 5 to 800Amps (Multiples of transformer rectifiers should be considered for greater than 12kWatt)</th>
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<td>10 to 55°C</td>
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**OUTPUT CONTROL**

- **Manual**
- **Switched**
  - Switch Control via control panel facia switches to select transformer tappings, 15 and 63 step control available as standard
- **Auto Transformer**
  - Auto transformer (Variac) control indefinitely from 0 to 100%.
- **Electronic**
  - Electronic thyristor control from panel facia mounted potentiometer giving indefinite variable adjustment from 3Volts to maximum rating.
- **Auto (Electronic)**
  - All auto systems operate from 3Volts to maximum rating and are fitted with a manual override facility.
- **Constant Current**
  - Constant current maintains the output current at the preset value irrespective of supply and output circuit changes.
- **Constant Potential**
  - A permanent reference electrode(s) controls the output current to maintain a constant potential at the surface of the protected structure subject to compensate for changes in electrolyte resistivity, coating efficiency, power supply voltage variation, tidal conditions etc.
- **Enclosures**
  - A wide range of standard and purpose built arrangements up to IP66 protection levels.
- **Material**
  - Mild steel, Stainless Steel, Aluminium and Glass Reinforced Polyester are available.
- **Finishes**
  - Epoxy/Polyurethane paint finishes on prepared shot blast, cleaned and zinc chromate primed/Zinga base as standard. Options include Zinc flame sprayed, natural bead blast finishes, etc.
- **Electrical/Electronic Components**
  - Selected to meet the specification requirement with particular emphasis on high efficiency transformers and generously rated semi-conductors
supply/output monitoring

- Limit and Alarm (high and low)
- Local/Remote indication facilities
- 4-20mA re-transmission signals
- RCCD/MCB and fuse protection
- Surge suppression
- Lightning Arrestors
- Metering
- "Instant Off" timers
- Synchronous timing

**Tests**

All transformer rectifiers undergo works testing to include the following as a minimum:

- Wiring connection integrity
- Circuit continuity and compliance
- Operation at full output current and voltage for a minimum of 12 hours
- High voltage insulation resistance test

In addition, new designs are subjected to a 12-24 hour heat run test at full load to ensure that the temperature rises are within permitted limits for the materials used in construction.
TYPICAL TRANSFORMER RECTIFIER GENERAL ARRANGEMENT
(Model Shown Oil Cooled 75V / 125A)

TYPICAL TRANSFORMER RECTIFIER / POSITIVE JUNCTION BOX SITE ARRANGEMENT