



An ISO 9001 : 2000 COMPANY



# RELIABLE

## D.C. POWER SUPPLIES



RELIABLE • MORE EFFICIENT • ADVANCED TECHNOLOGY • FLAWLESS PERFORMANCE

## VISION

To be Globally recognized organization Manufacturing & Marketing D.C. Power Supplies Voltage Regulating Equipments both for HT & LT , Distribution Transformers & Power Transformers.

## MISSION

To become customer focused, quality conscious, globally competitive company in Voltage Regulating Equipments & Transformers through quality, technology & innovation.

To strive for customer satisfaction through product, performance, delivery & service.



## QUALITY POLICY

We will offer Products that Meets or exceeds customer satisfaction in term of quality & delivery, We will achieve this by continuous improvement in our design processes by scientific approach through involvement of our employees & suppliers.

## GUARANTEE

All Transformers ,Chokes, Regulating Coils manufactured by **RELIABLE** are Guaranteed for a period of **FIVE YEARS** from the date of dispatch. Components not manufactured by RPS like Meters, Diodes, Breakers, Contactors, Relays, Fans, Motors, Temperature Indicators, Pilot Indicator are guaranteed for one year.

**“RELIABLE POWER SYSTEMS”** founded in 2003 having a team of Engineers having experience of more than 26 years in developing, designing, manufacturing and marketing Automatic Voltage Stabilizer, Silicon Power Rectifiers (for Electroplating, Hydrogenation, Anodizing, Zinc Refining, Copper Refining, D.C. Electromagnet and many more applications), DC Welding Rectifiers, Electrical Control Panels, A.C. Variable Supplies and other Electrical Equipments.

The belief that the product Quality & Customer Satisfaction are the basis for a modern organization led to the implementation of an ISO 9001-2000 Certified Company.

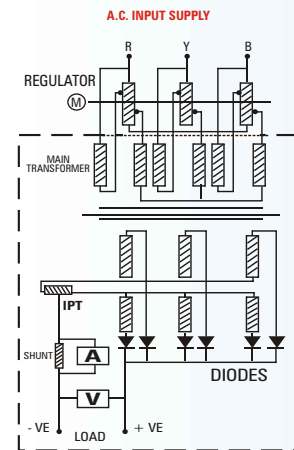


## D.C. POWER SUPPLIES (RECTIFIER)

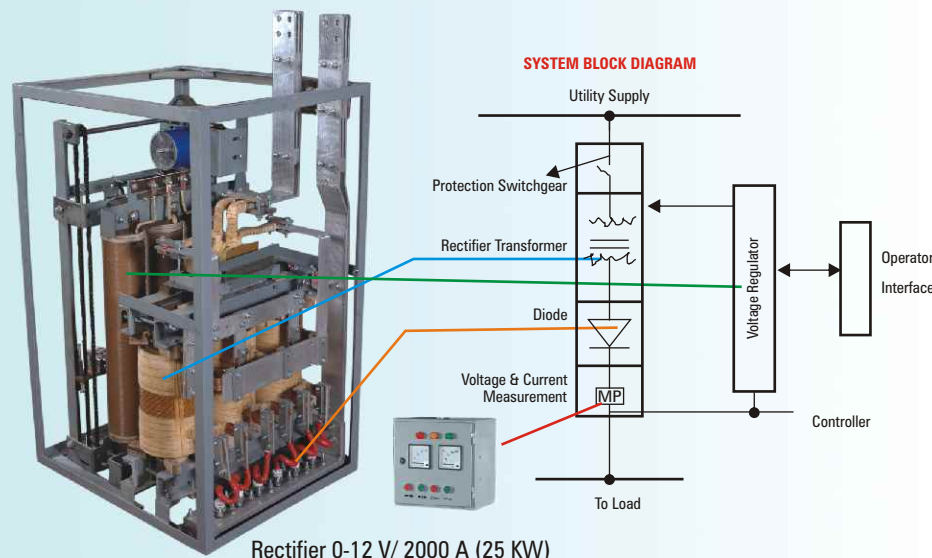
With Its easy convertibility from one voltage to another A.C. (Alternating Current) reigns supreme in the generation transmission and distribution Systems. Yet DC (Direct Current)/ DC power supplies for Electroplating Plants, Electro chemical plants, Copper, Aluminium & Zinc Refining all requires modest Voltage and high DC current. DC power is also required in other Industrial processes like Hydrogenation & Electrolysis. Such continuous Power Industries look for a reliable economical and trouble free form of DC Power supply Systems. **RELIABLE** offers a complete range of Rectifier Equipments for all such application and provides Engineering, Design and Technical support in choosing the right solution / Equipment.

## APPLICATIONS

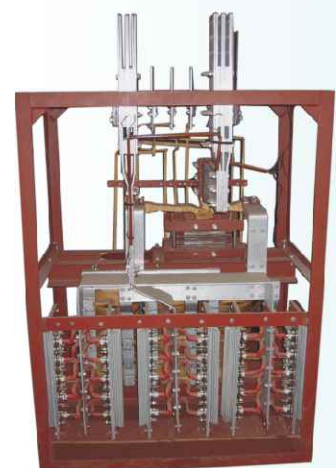
- Electroplating (Chrome Plating, Hard Chrome Plating, Zinc Plating, Nickel Plating, Copper Plating, Gold Plating, Silver Plating etc.)
- Anodizing, Anodized Electro Coloring, Hard Anodizing.
- Heating Furnace, Magnetization, Ionization.
- Electroforming
- Hydrogenation, Electrolysis
- Copper, Aluminium & Zinc Refining



Circuit Diagram



Rectifier 0-12 V/ 2000 A (25 KW)



Rectifier 0-12 V/ 5000 A (60 KW)

## GENERAL SPECIFICATIONS

<b>AC Input:</b>	Voltage	:	380/440 volts
	Phase	:	3
	Frequency	:	50 Hz.
	Customization	:	High Voltage Input up to 11 KV.
<b>DC Output:</b>	Voltage	:	8,12,16, 24 volts, 50 volts, 100 volts
	Current	:	0-20 KA
	Customization	:	Power Systems up to 20 KA and voltages up to 500 VDC are available.

**Efficiency:** **RELIABLE'S** Power Supplies are highly efficient with typically efficiency between 85-95% depending upon the DC voltage of the Unit.

**Power Factor:** 90% Rated output.

**Rating** : All components are rated as a standard for 100% continuous full load service in an ambient Temperature of 50°C.

**Temperature:** Reliable design its systems for a maximum rise of temperature of 35°C at the top of the oil with an ambient temperature of 50°C.

## STANDARD FEATURES

- **Design:-** Our Sales/Design Engineers are available to work with you to meet all of your product requirements. All components are designed to provide 100% continuous full load operation.
- **Electronics:-** Our precision Electronics are designed and manufactured to provide proven stable operation with  $\pm 5.0\%$  voltage/current regulation throughout the nominal range from 10%-100% of DC output.
- **Transformer:-**
  - **Winding Material:** Splice free, electrolytically pure copper
  - **Core Material:** Low Loss, High quality, Grain Oriented Silicon Steel provides good flux and low eddy current losses.
  - **Insulation Material:** 'A' Class Insulation is used for ONAN systems.
  - **Process** : The coils are vacuum impregnated by Varnish and then baked to cure. Varnishing provides additional electromechanical Strength. All coils are wound for stress distribution under fault conditions to provide superior mechanical strength.
  - **Cooling** : **RELIABLE** supplies are designed for optimum low loss/efficient operation and employ specially designed natural oil cooling to remove the heat generated during operation.
  - **Controls** : The following are examples of typically required Control configurations. **RELIABLE** is committed to working with each Customer on an individual basis to ensure your Control requirements are satisfied.
    - **Standard Control (D. C. Metering, Push Buttons and Indicator lights in a panel on the machine).**
    - **Manual Remote**



Air-cooled Transformer



B4C Regulator



750 KVA TRFR.  
33 KV/415 V with OLTC



150 KVA U/B AVR



10 KVA Single Phase AVR



Constant Voltage Controller



Carbon Roller



Silicon Diode



Shunt

- **Centralized Control Panel for Number of Systems**
  - **Constant Voltage Controller/Constant Current Controller**
  - **Zero Run Down system.**
  - **Ampere Hour Meter /Ampere Minute Meter**
- 
- **Semiconductors :** **RELIABLE** selects its semiconductors with an appropriate 200% safety factor to provide the ultimate in reliability. This design criterion Limits the junction temperature of semiconductor to typically less than 80°C, thus enhancing the life of the equipment.
  - **MS Shell :** The enclosure i.e. mild steel shells are fabricated with 8/10/12 SWG HR Sheets. The requisite supports along with Seam welded cooling fins are provided to dissipate the heat produced. The Housing is checked for leakage with pressure testing. The job is then paint finished inside and outside by degreasing and acid resistant Epoxy Paint. Standard Paint will be BS Grey. Change of shade on request.
  - **Ripple :** Standard 6 Pulse DC Rectifier will contain Less than 5% RMS AC Ripple when operated at Rated Voltage and Current.
  - **Training :** **RELIABLE'S** service Engineer may Instruct our customer's operator and Maintenance Personnel during the commissioning / start of the Unit or during final test at our works. This can be operational training and/or full maintenance repair training.
  - **Spare Parts :** **RELIABLE** maintains a considerable spare part inventory and has the appropriate factory approved spare parts on hand and ready for your use to assure maximum uptime of your process. **RELIABLE'S** power supplies are designed for decades of trouble free performance when the installation and maintenance guidelines contained in the service manual are followed.
  - **D. C. Bus Work :** **RELIABLE** uses Electrolytically pure Copper/Aluminium bus work exclusively in our rectifier systems. Bus Block with bolted joints and flexible connection are designed to minimize bus losses and to match the client's application requirement. The laminated bus structure designed maintain a low bus impedance and low voltage over shoot.

## QUALITY CONTROL

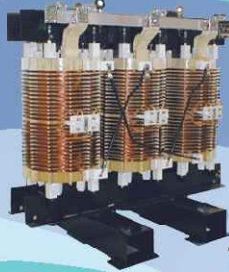
Each piece of equipment we build is rigorously tested and put through a systematic quality control examination prior to dispatch. Our test facility utilize state of the art equipment to verify that the Power Supply you receive is exactly what you ordered. Our staff of highly competent test technicians performs a full range of operational and functional testing, and maintains complete documentation of all test procedures and results. Prior to dispatch/shipment a final quality control inspection is performed.

# PRODUCT RANGE

Electrical Control Panel



Air-cooled Transformer



KVA TRFR.  
5 V with OLTC



2000 KVA I.T. Automatic Voltage Stabilizer



KVA Built-in  
mer cum AVR



315 KVA Distribution Transformer  
11 KV / 415 V



## Reliable Power Systems

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