

DARRAH's Water Cooled DC Power Supplies



DARRAH ELECTRIC COMPANY, manufacturing plating rectifiers since 1960, announces their enhanced line of Continuous Duty **WATER COOLED** Power Supplies for the metal finishing industry.

New models range in size from 500 through 20,000 Amp output in all common voltages.

Darrah's Water Cooled Rectifiers are ideal for applications where **CONTINUOUS DUTY** is required and the rectifiers are located near **CORROSIVE ATMOSPHERES**.

SOLID STATE SCR CONTROLLED RECTIFIERS

feature independent voltage and current adjustments and provide $\pm 1\%$ DC voltage regulation with current limit and $\pm 1\%$ DC current regulation with voltage limit.

SOLID STATE CONTROLLED MODELS can be connected to computers or process control systems. Rectifiers can be supplied to operate with inboard controls or from a remote controlled station.

HIGH-EFFICIENT DESIGNS

- Primary SCR controlled, secondary full wave diode rectification.
- Six-phase star or 6 phase double WYE with interphase reactor.
- All conductors of electric current are copper.
- DC Output voltage adjustment taps.
- High-efficient power transformer with balanced primary and secondary circuits.
- Rectifier Copper Bus completely water cooled for highly efficient operation.

Silicon Diodes

Secondary full wave diode rectification. Double sided cooled with copper water paths. Oversized diodes with only one diode per leg.

AC Line Fuses

Thermostatically controlled incoming water solenoid cycles on and off as water is required. All brass fittings with water hammer.

Cooling Hoses

Darrah uses crystal clear reinforced heavy wall hosing for all water paths. Crystal clear allows visual confirmation of water flow. All hoses are rated for high temperature applications.

Darrah uses only stainless steel hoses, clamps for all connections.

Power Transformer

Darrah's power transformers are U/L listed. Transformers have isolated copper primary and secondary windings and are designed for continuous operation, 24 hours/day.

Each is supplied with three internal over temperature thermostats. Large 3/8" water passages.

Sealed Side Mounted Control Enclosure

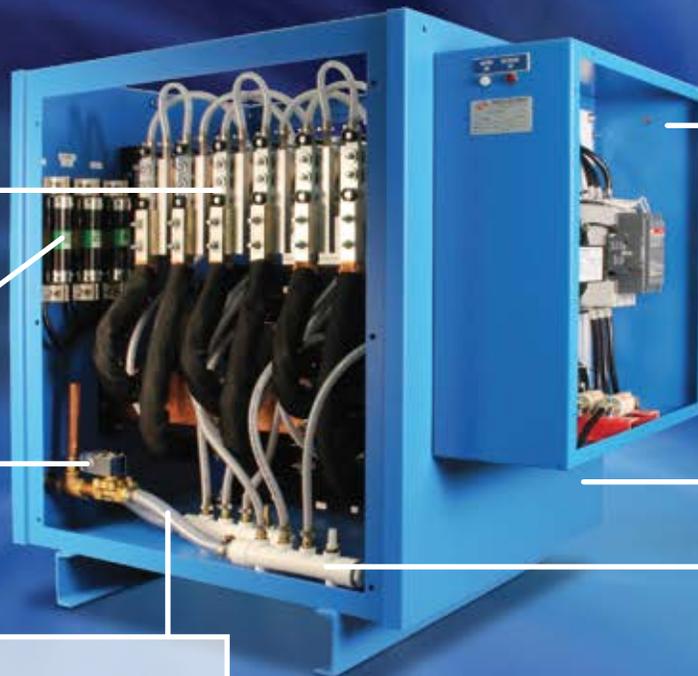
Cabinet

Removable front, back, and top panels for easy servicing. Compact design. All exterior hardware is stainless steel.

All cabinets are powder coated finished.

Water Manifolds

UL listed nylon manifolds with matched parallel water paths. Brass hose barbs.



Popular Darrah Rectifier Options

PLC Interfacing and Controlling

Darrah offers a four channel PLC interface. Two channels control the DC output current and voltage. Two monitor the voltage and current. Use PLC or processes controllers to start or stop the rectifier, initiate ramp cycles, and timer functions. Monitor safety circuits and alarms.

Digital LED Meters

.5" high display, available with NEMA rated clear sealed covers.

Ampere Time Meters

Accurately record coating thickness over time. Available in preset or totalizing counters.

Batch or Cycle Timers

Unlimited number of uses available in seconds, minutes or hours.

Internal DC Polarity Reversing

Manual or automatic controls.

PLC Programming

Control DC output current and voltages. Start processes or polarity reverse.

Adjustable DC Voltage Ramp Control

Repeatable accuracy in processes requiring a preset DC voltage rise over an adjustable time period.

Ripple Filtering

Available to maximum 5%, 2%, and 1% throughout entire DC output range.

Adjustable Transformer Taps

Improve efficiency and electrical cost savings with selected voltage taps. Unlimited choices available.

Custom Enclosures

Special enclosure shape or size. Multiple independent units in one cabinet.

12 Pulse Designs

High efficiency, ultra low output ripple, lower harmonics.

Standard Protection and Safety Circuits

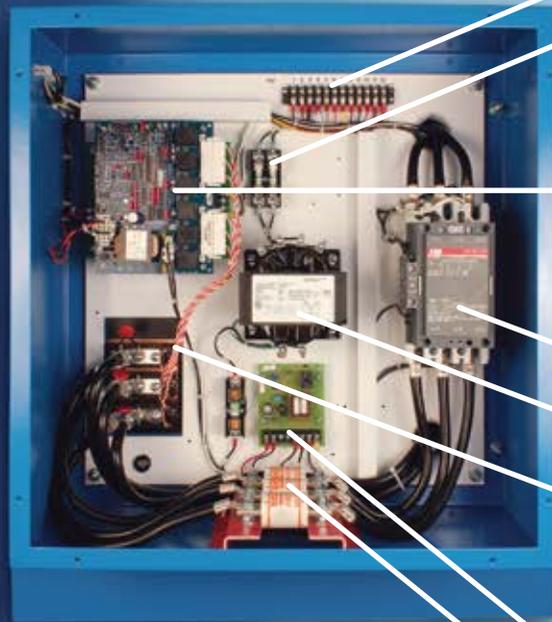
- AC Line Fuses
- Start and stop control circuits stepped down to 115 volts. Includes isolation transformer with primary and secondary fuses.
- AC Line phase loss and phase imbalance protection.
- AC Line Contactor
- Thermostats located in strategic areas as power transformer, SCR's, and diodes.
- DC current and DC voltage limit controls.
- Fast response electronic DC overload protection.
- Fast acting semiconductor fuses.
- Incoming water solenoid, shuts off water flow when rectifier is off.

Input Line Requirements

208 through 600 volts, 3 phase, 50 or 60 hertz.

Duty Cycle

All models are designed to be operated at 100% nameplate rating continuously at 40° C ambient.



Terminal Strip

For remote control connections.

Control Circuit Fuses

SCR Firing Board

- Common industry standard
- Digital LSI technology
- High quality keyed quick disconnect plugs and jacks.
- Operational status indicating lights
- Not phase sensitive

AC Line Contractor

Step Down Voltage Control Transformer

SCR Modules

With through-the-wall design. Sensitive electrical connections are located in sealed side enclosure, eliminating short circuits commonly found in humid environments.

Fast Response DC Overload

Fast Acting Semiconductor Fuses

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