



# DARRAH's Electro-Coating Power Supplies

Since 1960, Darrah Electric Company has been manufacturing custom engineered ELECTRO COATING DC POWER SUPPLIES for laboratory and production use. Darrah's customers have come to rely on quality workmanship, dependable designs, fair pricing and on-time delivery. Each Darrah Power Supply is specifically designed and full load tested to ensure maximum performance. Protective circuits and components are provided by Darrah to safeguard both the power supply and the operator.

**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, and are found in small laboratory models as well as large production Power Supplies. Rectifiers can be supplied to operate with inboard controls or from a remote controlled station.

## Exhaust Fan

A polypropylene fan blade is utilized, specifically designed to resist dirt buildup and last for years. The fan motor is three phase, totally enclosed, and lubricated for five years usage.

## AC Line Fuses

## AC Line Contactor

## SCR Rectification with Transient Suppression

Darrah locates the SCR's in either the primary or secondary side of the power transformer, dependent upon efficiency and the required process.

## Cabinet

Heavy duty steel construction.

## Finish

Two part polyurethane provides exceptional resistance to the environment. Available in all popular colors.

## Ripple Filtering

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



## Cooling Fan

Small power supplies can be natural convection cooled. Forced air cooling with fans or blowers is common in larger sizes. For harsh, corrosive or high temperature environments, water cooling is best suited.

## Sealed Side Mounted Control Enclosure

- Environmentally sealed
- Convenient location for:
  - Terminal connections
  - Printed circuit boards
  - AC line and DC overload devices
  - Fuses and Overloads
  - SCR control connections
  - Maintenance and servicing

## Power Transformer

Darrah manufactures its transformers to our own rigorous specifications. Each transformer has isolated primary and secondary windings and are wound with all copper wires. The transformer is rated at NEMA class "H." Each transformer is designed and tested to provide continuous nameplate rating.

*Darrah's units feature stepless or infinite DC output control adjustable from zero to full load rating.*

**Custom Designed for Laboratory and Production Use**



# Popular Darrah Rectifier Options

## 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.

## 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.

## Air Filters

Washable aluminum or stainless steel air filters.

## 12 Pulse Designs

High efficiency, ultra low output ripple, lower harmonics.

## DC Ground Fault Circuit Interrupter

Safety shut off typically for laboratory ungrounded systems.

## Conveyer Low Voltage Circuit

Switch DC output to selected lower voltage level when conveyer is stopped.

## Selection Between Two Workstations

Feed multiple workstations or tanks from a single rectifier. Manual or remote operation.

## DC Switch

Used for output isolation for single or multiple rectifiers.

## Remote Control Enclosure

Sealed thermoplastic remote enclosures can house single or multiple rectifier controls. Exceptional chemical resistance meets NEMA 12 and NEMA 4X requirements.



## PLC Interfacing and Controlling

Darrah offers a four channel interface for rectifier controls from a PLC or process controller. Two channels from the PLC can control the rectifier's DC output amperage and voltage. Two channels monitor the amperage and voltage. Use PLC to start or stop the rectifier, initiate ramp cycles, timer functions, safety circuits and alarms.



## 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, diodes, and heat sinks.
- Fan or blower fuse protection.
- DC current and DC voltage limit controls.
- Fast response electronic DC overload protection.
- Diode and SCR fuse protection available with blown fuse indicators.

## Input Line Requirements

208 through 600 volts, 3 phase, 50 or 60 hertz. Smaller production and laboratory models can be ordered with all common single phase AC line inputs.

## Duty Cycle

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

## Warranty

Warranty on all components and workmanship is one year.



# DARRAH ELECTRIC COMPANY

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