

Fresh Ideas
for the
ESP Industry

{Used & Respected Around the World}

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Redkoh has been a global leader in the design and development of controls for the Electrostatic Precipitator industry since 1984. We work with clients in a wide variety of sectors all over the world, always with the same goal: delivering the right products to meet their needs and make them more competitive.

ELECTROSTATIC PRECIPITATOR CONTROLS



Our success is the result of innovation, insight, and our commitment to breaking new ground. ESPs are about clean air and efficiency – as the green shift continues and our customers keep reaching

for higher standards, we will maintain our focus on providing them with exciting, efficient new technologies.

Redkoh Industries Product Line:

- Microprocessor transformer rectifier controls, upgrades and new systems.
- Rapper/vibrator controls for both US domestic and international designs.
- Computer based central control for remote control and data acquisition.
- Interfaces for DCS and PLC systems.

Redkoh Also Provides:

- **Design** – We perform design work, which includes: production of general arrangement drawings, electrical schematics, operating manuals and much more.
- **Development** – The secret of Redkoh's success is the ongoing development related to the air pollution control equipment. Leading edge hardware and software design is a crucial part of our systems.
- **Manufacturing** – We build our own controls from circuit board design through assembly, to complete control panel manufacture and testing.
- **Installation** – We offer full installation as well as supervised installation and start-up services.
- **Training** – Our experienced staff share their knowledge by providing training sessions and seminars customized to your specific needs.
- **Start-Up and Service** – We offer fully documented commissioning services for new equipment.
- **Repairs** – We provide rapid and cost effective repairs on analog, digital and microprocessor precipitator controls from many manufacturers.

Our experts are available to answer any questions you may have regarding precipitator controls and operation



Paul Ford, President

John Jannone, Vice President

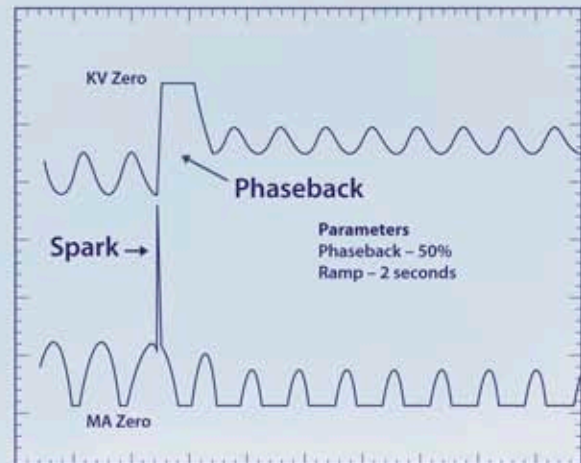


ELECTROSTATIC PRECIPITATOR TRANSFORMER-RECTIFIER CONTROLS



With the RK2000 you can rest assured that your precipitator is operating at its most efficient level.

- No other Control is as easy to operate as Redkoh's model RK2000 electrostatic precipitator transformer control.
- Programming the RK2000 is a snap.
- The RK2000's liquid crystal display indicates more than 40 operating and alarm messages.
- Intermittent Energization (IE) allows energy savings and reduced emissions under high resistivity conditions.
- The Back Corona operating mode offers early detection and optimization with an automatic P.R.F. adjuster.
- Peak Secondary Current Limit provides maximum TR protection in IE mode.
- Arc and Spark Detection are mutually redundant and ensure accurate and reliable detection.
- The RK 2000 can detect sparks from either the secondary current or voltage.
- Proportional Spark Rate Control allows you to select your desired spark rate.
- System Redundancy permits automatic switching from auto to manual modes for CPU failure.
- Pre-spark Electrical Readings provide valuable information on breakdown levels.
- Programmable Averaged Electrical Readings smooth the display operation, and increases readability.
- No On-board Calibration is required making board replacement a cinch.
- SCR Indicators immediately show SCR and Firing Circuit problems.



The RK2000 TR Control also features:

- A Self-Diagnostics System
- Display Hold
- SCR Conduction Angle Display
- Power Down Rapping
- An Integrated Tumble Hammer Motor Control System, eliminating the need for a separate PLC based Rapper Control
- A Modbus Interface to communicate with your DCS or PLC



ELECTROSTATIC PRECIPITATOR MICROPROCESSOR RAPPER/VIBRATOR CONTROL

An electrostatic precipitator cannot operate efficiently if its internal components are not kept free of excessive particulate buildup. Redkoh's MRC-NT is an advanced microprocessor rapper system, designed specifically for precipitators. It provides the maximum flexibility of device intensity and timing for plate and electrode cleaning. Redkoh's MRC-NT energizes magnetic impact rappers, as well as electric vibrators, and air solenoid valves for pneumatic devices.



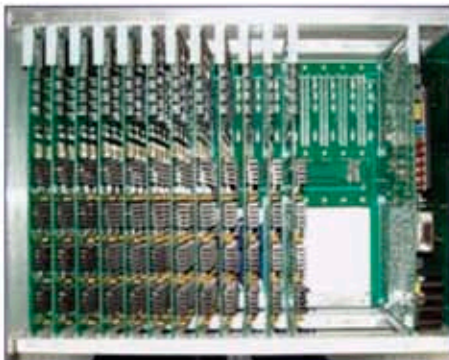
Control Parameters

- **Cycle Clock** – Adjusts the rapping frequency of a group of rappers.
- **Rapper Intensity** – Adjusts the intensity with which the rappers/vibrators strike the plates or electrodes. Accurate to within 0.25" of lift.
- **Repetitive Energization** – Allows multiple impacts
- **Sequence** – Energizes all rappers/vibrators in a sequential manner at a faster than normal clock time, for rapid cleaning or troubleshooting purposes.
- **Master Intensity** – Changes the relative intensity of every single rapper on the roof with only 4 keystrokes.
- **Code** – A security code prevents unauthorized tampering with the control's operating parameters.

Additional Control Features

- Six mutually exclusive and distinct programs are available to the user. Have the MRC-NT change operating programs in response to load or varying fuel sources.
- A Walk down / Maintenance sequence is easily selected.
- The controls provide power down and reduce power instructions to the RK2000 to further enhance cleaning under difficult conditions.
- All control can be achieved at the control keyboard and display unit.
- The MRC-NT differentiates between open or shorted coils and displays alarms accordingly.
- Modbus Interface to communicate with your DCS or PLC.

The MRC-NT's diagnostics modes for internal and rapper diagnostics are unsurpassed.



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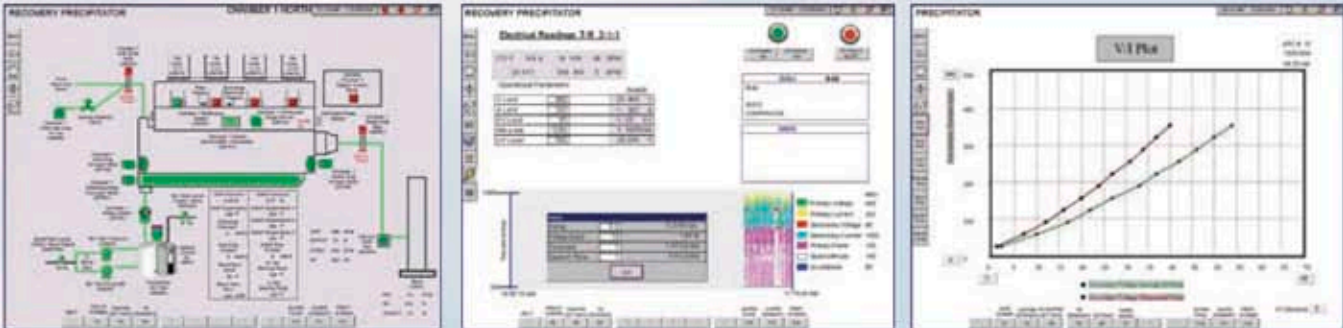
REMOTE DATA ACQUISITION AND REMOTE CONTROL OPTIONS

At Redkoh Industries, we manufacture a complete line of remote control and data acquisition systems. These integrate the Microprocessor Transformer Control and our Microprocessor Rapper Control to your DCS, PI, PLC, WEB, SCADA, or Intranet system.

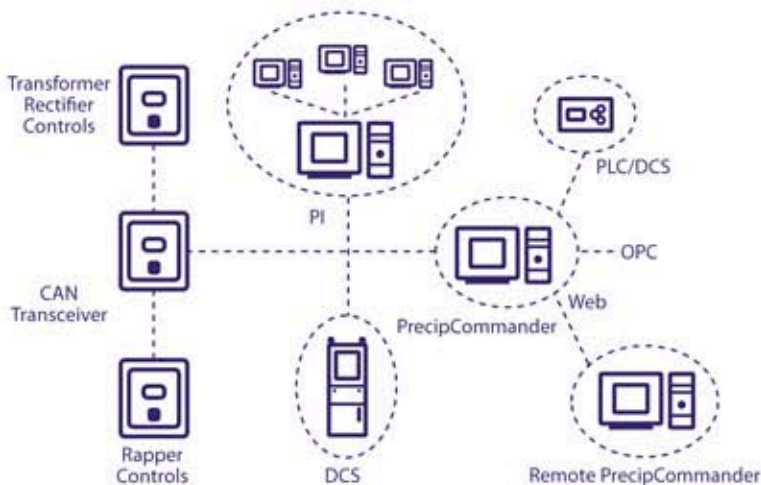
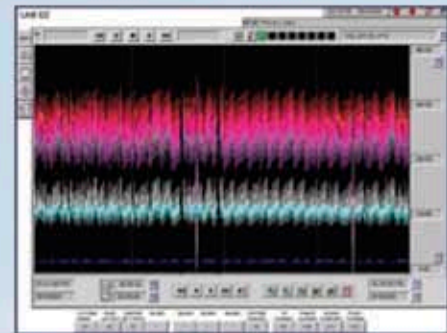
A CAN-Transceiver acts as a gateway between the individual TR and Rapper controls, and a plant's chosen remote system. It permits data acquisition from, and remote control of, the individual TR and Rapper controls.

The Transceiver ensures that your plant personnel need only deal in a straightforward and simple manner with one point to point communications loop, instead of coordinating with control nodes spread throughout the plant.

The Transceiver also has an optional Energy Management System that insures minimal operating power for a given opacity. This saves plant resources and quickly pays for itself.



Typical PrecipCom Commander user screens showing system process flow, real time graphing of electrical data, historical graphing of data, and automatic VI curve generation.



PrecipCom Commander

A full-scale, computer based, data acquisition and control system offering a high degree of graphical user interface.

- Long term data storage.
- Process optimization.
- Instantaneous and timed reports.
- Line and bar graph representations of multiple electrical levels.
- Automatic VI curve generation and storage.
- Multiple protocols available for plant DCS integration.
- Browser based remote access system.

IS YOUR PRECIPITATOR A CANDIDATE FOR REDKOH'S MID FREQUENCY POWER SUPPLY?

- Do your AVC controls operate substantially below the rating of their TR?
- Do you have current suppressed electrical fields?
- Do you risk de-rating to remain in compliance?
- Do you have new controls, but wish to explore the benefits of higher frequency operation?
- Do you want to maintain your existing DCS or Plant Interface
- Do your existing AVC's and Rapper controls already provide you with the SCADA you prefer?

If you answered "Yes" to any of the above questions you could benefit by upgrading to a Mid Frequency Power System

Redkoh's Mid Frequency Power Systems offer:

- A Patent Pending Interface allowing you to retain existing controls and communications equipment.
- The option of using the existing TR sets at higher frequencies.
- A Redkoh controller serially compatible with other Redkoh RK2000 60 Hz systems.
- The option of re-using existing power and field cabling.
- Establishing a "Hybrid" power supply system without having a mismatch of equipment.
- Increased average power to the precipitator at a better than expected power factor.
- A purpose designed and manufactured "Mid Frequency Transformer" for those instances where the existing TRs will not meet the power requirements.

Let us help you to determine the feasibility and benefits of Mid Frequency Power!



Equipment can be custom designed to suit your needs.



The Future of Pollution Controls

Efficiency is the key to competing in today's tough global markets. Efficient operations depend on superior equipment and proven strategies that can keep you lean, green, and ultimately more productive.

When it comes to ESP controls, Redkoh has been on the leading edge for over 25 years. If you want to get there too, contact us today to find out what we can do for you!

Redkoh Industries Inc.
300 Valley Rd.
Hillsborough, NJ 08844

Tel: (908) 369-1590
Fax: (908) 369-1594
www.redkoh.com

