

## Transformer Rectifier Sets for Electrostatic Precipitators

### Custom designs for new ESPs or Standard models for retrofit/replacement

Transformer-Rectifier (T/R) sets supply specified DC voltage and current to electrostatic precipitators. NWL has designed thousands of custom and standard T/R sets, the majority of which are still in service. Additionally, we can provide standard designs for a number of older

T/Rs, such as Westinghouse, Research Cottrell, and General Electric. Our T/Rs meet all major electrical and mechanical requirements for American, European, and Japanese standards.



### Transformer Rectifier Set Product Description

- **T/R Oil Tank** – sturdy steel construction with multiple paint coatings for durability
- **Secondary Voltage** – output voltages range from 30 to 130 kV
- **Secondary Current** – output currents range from 200 to 2500 mADC
- **Low Voltage Junction Box** – input and metering feedback bushings, terminal board for temperature alarm contacts
- **Transformer** – high voltage, step-up transformer designed to distribute electrical and mechanical stresses
- **Rectifier** – converts AC to negative polarity DC output; connected to a grounding switch
- **Current Limiting Reactor (CLR)** – protects T/R set and SCR controller by limiting current to both equipments
- **Air Core Reactor** – installed in series with each HV output bushing
- **High Voltage Switch** – see next page
- **Other options** – wide array of gauges and other accessories can be customized to your exact needs



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## Equipment Options

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- **High Voltage Switch** – there are 3 main external switches available:
  - **Ground** – available for both single and double bushing. Switch will ground both the T/R set and precipitator field.
  - **Disconnect** – disconnects and grounds the T/R set from the precipitator. T/R can still be energized for troubleshooting and testing.
  - **Splitter** – this switch is used when the T/R set is feeding two precipitator fields. This switch can isolate one field for maintenance while the second one remains energized.
- **Controls** – NWL supplies a full range of ESP controllers, including the following:
  - **Graphic Voltage Controller (GVC)** – complete power supply monitoring system with detachable hand-held LED display. Available as complete system or digital control upgrade.
  - **Precipitator Control and Management System (PCAMS)** – PC based monitoring system that integrates ESP power supply, rapper, and ash hopper operations. A complete control system for your precipitator.

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## NWL Transformer Rectifier Set Features and Benefits

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- Our T/R sets are designed for safe and quick installation, operation and maintenance
- Physical connections match existing bus duct, base mounting and power connections
- Electrical and mechanical parameters meet all requirements specified for your ESP
- Exclusive T/R Configurator™ provides cost-effective plug-and-play designs for competitive T/R sets
- Corrosion-resistant coatings are available for especially harsh ambient conditions

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## Transformer Aftermarket Support Throughout Service Life

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NWL provides a complete package of Aftermarket Services to support your T/R sets throughout their operational life-cycle. Our capabilities include the following:

- **Repair and Refurbishment** – we have an in-house repair facility that can handle everything from emergency repairs to complete refurbishments.
- **Field Service** – our service technicians can inspect, troubleshoot, and repair NWL equipment onsite in addition to providing training for your personnel.
- **Equipment Upgrades** – we have upgraded hundreds of obsolete voltage and rapper controllers with our digital upgrade packages. Where needed, we have upgraded linear T/R sets with our new switchmode power supply technology.

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## Unmatched Capability

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NWL has been the undisputed leader in ESP power supplies and controls for over two generations through constant innovation and outstanding customer support. We stand ready to assist you any way we can.

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