



## **PRECON** ENERGY SAVING SYSTEM FOR ELECTROSTATIC PRECIPITATOR IN STEEL PLANTS

### **FUNCTION**

The electrostatic precipitator (ESP) is one of the main consumers of electrical energy in a BOF plant. Based on decades of process and automation experience, Primetals Technologies introduced Precon (Precipitator Economizer) to the market. The economizer achieves substantial energy savings in ESP operation.

Operators of ESP systems must ensure that dust concentrations remain at the required levels. The power needed to achieve this is secondary and energy input to the ESP is 100% most of the time. This is an enormous waste of energy and negatively impacts operational costs. Our technological experience with electrostatic precipitator reveals that maximum energy input is required only during the steel production phases. In non-production phases the energy input can be reduced to a minimum and still reaching the boundary limits of dust concentration in the clean gas.

The Precon system is designed either as a fully automatic stand-alone unit or as a package integrated into the dry-dedusting automation system. Based on the converter phase and actual process conditions, the system controls the level of possible energy reduction without affecting overall dedusting performance. All relevant process data are analyzed during operation, and the power reduction calculation is sent to the individual high-voltage units of the ESP. The operator can easily switch on the automatic energy reduction or use the preselected settings.

### **FIELD OF APPLICATION**

All primary dry-type dedusting systems with electrostatic precipitators in steel plants.

### **BENEFITS**

- Energy savings up to 60% of the present power consumption
- Short payback time
- Energy optimized dedusting control of the electrostatic precipitator
- Dust concentration within the required boundaries
- Short implementation and commissioning time
- Complete system is easy to use
- Easy implementation into existing systems



Precon cubicle with touch panel



Electrostatic precipitator (ESP)

## PRODUCT FEATURES

- Automatic and dynamic control of energy reduction parameters
- Highly accurate power monitoring devices for each field of the ESP
- Dust concentration measurement for dynamic energy control
- Simple switch-over from normal operation mode to energy-reduction operation
- Integrated energy management evaluates all relevant information of the consumed power during each converter cycle
- Industrial PC and integrated PLC guarantees independent solution
- Flexible communication to high-voltage units of various suppliers of the electrostatic precipitator
- Flexible design of software and HMI for easy implementation in existing systems
- Precon system can handle up to 3 ESP lines in parallel operation

## SERVICES

- Integration engineering
- Hardware engineering and supply
- Calculation of energy reduction parameters
- Erection advisory
- Commissioning advisory
- Spare parts
- On-site training for operation and maintenance personnel.

## ELECTROSTATIC PRECIPITATOR (ESP)

The electrostatic precipitator is one of the main-equipment of primary dry-type dedusting plants with high electrical energy consumption. Dust particles are negatively charged by high voltage and become electrostatically attracted to the positively charged collecting electrodes.

## OTHER RELATED PRODUCTS

- Bag Filter Control
- Acoustic Expert