DigitARC™ PX3

The DigitARC™ Electrode Regulation System is the base of the AMI optimization solutions for all EAFs. It provides state-of-the-art electrode control and incorporates advanced tools to monitor the performance of the heat in every aspect, with a practical and user-friendly interface.

The latest DigitARC™ PX3 provides state-of-the-art Electrode Regulation System by incorporating a set of useful tools to help the EAF supervisor monitor the performance of the heat in every aspect in a practical and user-friendly interface.

- **Control Configuration**
  Multiple control modes and specific operation algorithms for AC, DC, Shaft, and Twin Shell Furnaces. 
  Advanced Non-Conductive Charge, Cave In and Cross Arc protections. 
  Dynamic response characteristic.

- **Monitoring and Diagnostics**
  Complete system monitoring with logging of I/O and internal variables. 
  Automatic tests of individual electrode responses, to identify changes in the hydraulic and mechanic systems of each phase. 
  GiantBoard™ interactive touchscreen for full system monitoring.

- **Performance Evaluation**
  Detailed performance reports of the heat and of the control for analysis and benchmarking. 
  Identify, log and track any event that affects optimal heat performance at a sampling speed of up to 8 milliseconds.

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SmartFurnace™ MODULES

- **SmartARC™**
  Decides the best operating points based on the heat stage, slag level, arc stability and scrap mix for transformer and reactor tap reference.

- **IoTrode™**
  Measures, Controls, and Optimizes the consumption of graphite electrodes using advanced digital technologies and the tools of Industry 4.0.

- **Slag**
  Implements an online mass balance to model the slag composition and recommend fluxes to achieve the target basicity and MgO Saturation.

- **DRI/HBI/Scrap**
  Controls the rate of DRI, HBI or Scrap in continuous feeding systems to maintain an optimum temperature profile, based on the actual heat conditions.

- **Abnormal Water Vapor Detection (AWVD)**
  Proven abnormal water vapor detection provides valuable information for process safety. Non extractive measurement of CO, CO2, H2O and temperature. With automatic path alignment and measurement response in less than 2 seconds.

- **Off-Gas**
  Using a new laser technique developed by ZOLO Technologies, the EAF control system is capable of analyzing on real time the EAF off gas using the TDLAS technology with a laser beam. This information is the feedback the system needs to close the chemical energy control loop, helping to control and optimize the addition of Carbon, Gas, and Oxygen, and to identify potential risks.

- **Oxygen**
  Controls the rates of Gas, Oxygen and Carbon considering the conditions of the heat and the composition of the bath.