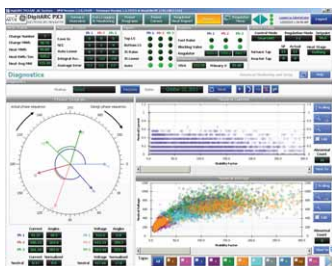# DigitARC™ PX3
High Performance Electrode Regulator

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.
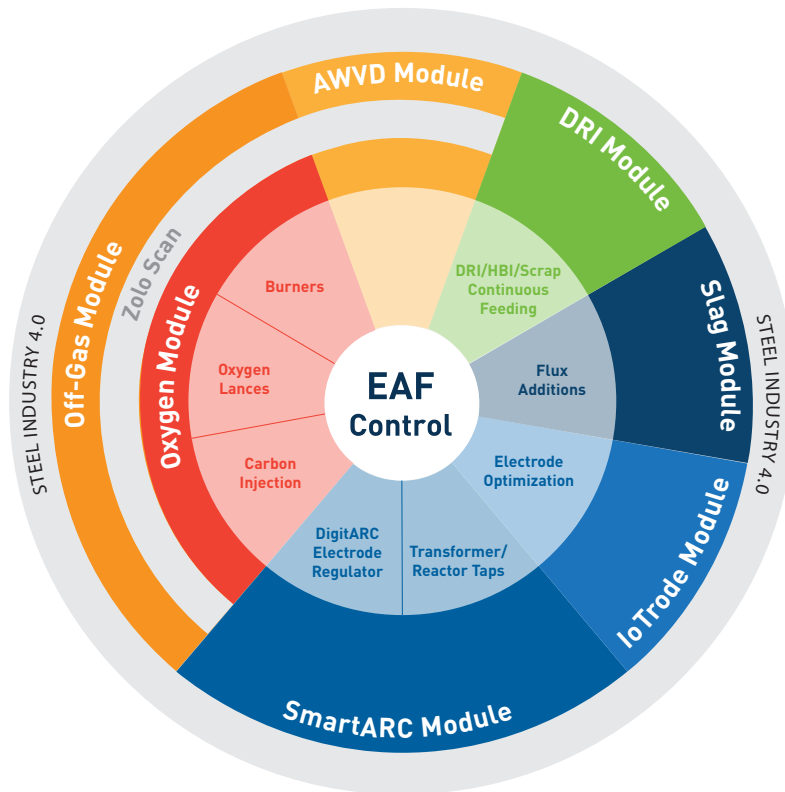
SmartFurnace™ Modules

▶ **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.

▶ **Oxygen**
Utilizes electrical data from the PX3 and SmartARC™ to become more than a burner control program. The SmartFurnace™ Oxygen Module controls the rates of gas, oxygen and carbon considering the conditions of the heat the composition of the bath and additional inputs to provide accurate end point prediction and control.

▶ **Slag Optimization**
For carbon steel producers this SmartFurnace™ Module implements an online mass balance to model the slag composition and recommend and control flux additions to achieve the target basicity and MgO Saturation.

▶ **Off-Gas**
The Off-Gas Module saves energy. The main goal is to optimize the chemical energy into the EAF. The EAF control system is capable of analyzing on real time the EAF off gas using the TDLAS technology with a laser beam.

▶ **AWVP (Abnormal Water Vapor Detection)**
One of the most advanced SmartFurnace™ Modules AWVD utilizes *AI* and machine learning to compare the many normal sources of water in a furnace vs an abnormal water vapor condition.

▶ **DRI/HBI Feed**
Optimize the time to start the DRI/HBI feeding and control the steel temperature using advanced metallurgical modeling to avoid accumulation of un-melted material in the furnace.