

DigitARC® PX3

High-Speed Digital Electrode Regulation System

Electrode Regulation System

The DigitARC® PX3 Electrode Regulation System is the core of AMI's EAF optimization solutions. With over 35 years of expertise and implementation in 275+ Furnaces worldwide, it delivers proven reliability and efficiency for even the most demanding EAF and LF applications. Our advanced electrode control technology ensures optimal arc stability, real-time performance monitoring, and seamless operator interaction through an intuitive interface. Today, more than 80% of the North American EAF steel capacity is melted with the AMI regulation systems.

DigitARC® PX3

Forms the foundation of AMI's optimization solutions for all EAFs, providing state-of-the-art electrode control and advanced monitoring tools for heat performance, all within a practical and user-friendly interface.



DIGITARC® PX3 SPEED TEST - EXECUTION



DIGITARC® PX3 SPEED TEST - ANALYSIS

Key Features

Core Functionalities

- ▶ Open access with user-friendly interface
- ▶ 2 CPUs (embedded dedicated control, not PLC-based, for measurement and control, storage, intercommunication tasks, CPU for HMI, advanced diagnostics and analysis tools)
- ▶ Compatible with all PLCs for EAF control

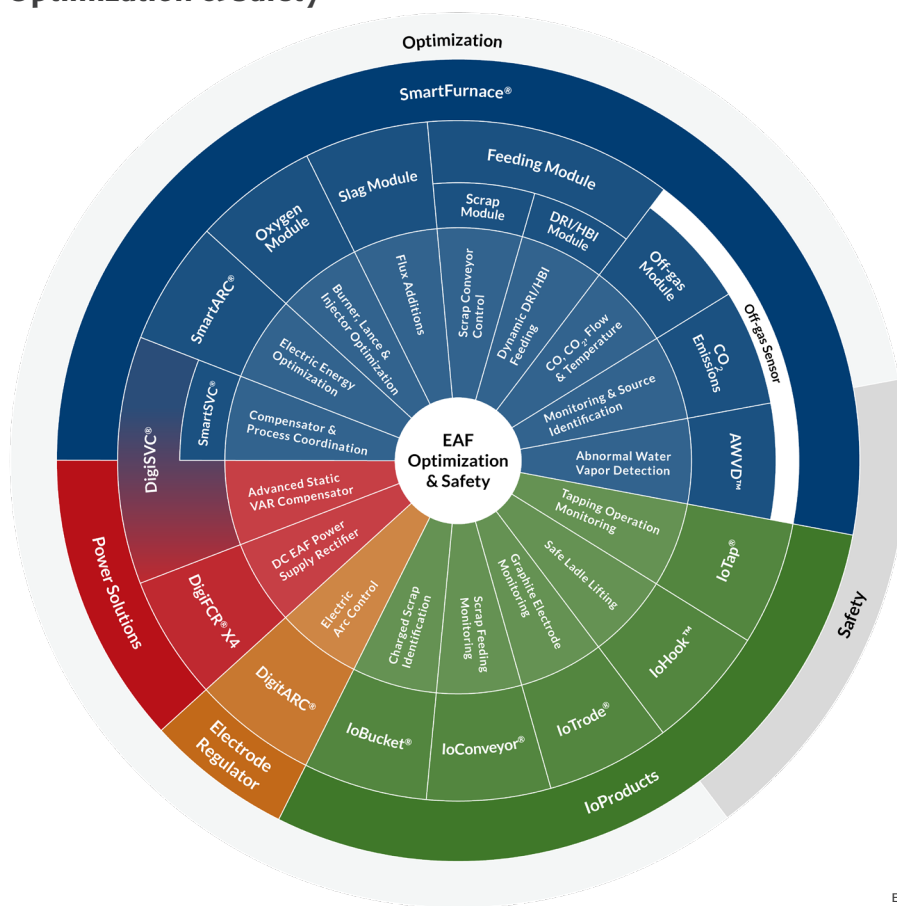
Advanced Features

- ▶ Automatic hydraulic pressure monitoring and dynamic NCC
- ▶ Automatic test of electrode response
- ▶ Advanced diagnostics & analysis tools
- ▶ Primary voltage and current monitoring
- ▶ Ultra-high resolution electrode mast speed sensor
- ▶ High speed electrode pressure reading
- ▶ Commands fast raise and blocking valve directly

Benefits

- ▶ **Reduce electrode consumption:** A more stable control of the electric arc directly influences the consumption of the electrodes.
- ▶ **Improve arc stability and electric power input:** A faster response allows for a better control of the arc stability. This allows to stably run higher power input levels, increasing active power.
- ▶ **Minimize electrode breakages:** With advanced algorithms for detecting non-conductive charges, scrap cave-ins and the diagnostics for hydromechanics system performance.

Electric Arc Furnace Optimization & Safety



EAF OPTIMIZATION & SAFETY DIAGRAM

SmartFurnace®

The SmartFurnace® System enhances productivity and reduces energy use per ton of steel. As an advanced AI-driven expert system, based on the SmartKnB® platform developed by AMI, it dynamically adjusts electrical and chemical energy inputs based on real-time heat conditions. Recognizing that every EAF is unique, we provide the tools and expertise needed to optimize performance. With a modular design, the system enables coordination between energy input controls, while its open architecture allows for seamless customization, ensuring maximum efficiency.

IoProducts

Advanced solutions for monitoring and controlling critical aspects of the steelmaking process. Built on the SmartKnB® graphic development platform, they provide advanced customization within an open, user-friendly architecture. By integrating Artificial Intelligence, and Image Processing, these modules accelerate digitalization, improving efficiency, safety, and overall process optimization.

Power Solutions

We provide power electronic solutions that play a key role in enhancing Meltshop performance. The DigiFCR® X4 is our Firing Circuit Replacement system, designed to fully upgrade the controls of existing DC EAF power rectifiers. It improves current regulation while also extending protection for the furnace. Meanwhile, the DigiSVC® is our advanced Static VAR Compensator that stabilizes voltage, improves power factor, and compensates for reactive power in industrial electrical systems. Both solutions can be delivered with new power electronic hardware or as retrofits for existing systems, regardless of the original manufacturer.

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