BF Process Models & Expert System

BFXpert®

Ironmaking
BFXpert® is Paul Wurth’s solution for an integrated Level-2 process control system for blast furnace operation. The system combines the best available process know-how with the most extensive expertise in blast furnace design and iron-making equipment.

- Optimize operational safety, stability and costs
- Achieve high BF productivity
- Increase BF availability
- Avoid incidents

The easy to use, powerful system improves your control of blast furnace process complexity while offering optimized operational safety, stability and costs.

BFXpert has been designed to support customers in achieving operation of a highly productive blast furnace.

As a single example, while BFXpert is running, models for thermal regulation actively reduce coke consumption. Continuous monitoring of the operation combined with the integrated expert system SACHEM® reduces the work-load of operating personnel and avoids incidents, thereby increasing your BF availability.

The complex process of blast furnace iron making can be continuously challenged by varying raw material quality and operating conditions. If this process is properly controlled, numerous cost saving opportunities can be realized. The powerful models and features included in the BFXpert system can assist all levels of the organization: from management to process engineers to operators in the fulfillment of operational targets and optimization of the complete blast furnace process.

Paul Wurth has considered the great complexity of blast furnace operation. BFXpert provides a multi-faceted, integrated approach to ensure a safe, ecological and economical operation of the iron making process.

BFXpert, with its included models, tools and the expert operator guidance system SACHEM supports your blast furnace operation in various aspects of the iron making process.

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BFXpert major advantages:

- Improved blast furnace burden calculation and burdening
- Stable and smooth blast furnace operation
- Improved burden descent and burden descent tracking
- High burden permeability
- Stable hot metal temperature
- Stable liquid retention in the hearth
- Chilled-hearth avoidance
- Improved Blast Furnace efficiency
- Fuel savings
- High fuel injection rate
- Optimized hot stoves control
- Campaign life extension
- Improved product quality

Over 90 references for Blast Furnace models.

BFXpert is key component of ongoing and future Paul Wurth projects.

BFXpert includes the following five groups:

CM Control Models
PM Process Models
OM Optimization Models
ES Expert System SACHEM®
ST System Tools

Energy Management System (EMS)
Global Cost Optimization

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Company Profile

From its leading position in engineering of Blast Furnace equipment and installations Paul Wurth is offering electrical and automation solutions to the steel industry and affiliated sectors.

Highly skilled and experienced engineers, technologists and designers provide design and engineering for quality electrical control systems, from stand-alone solutions to complete turnkey packages. Systems can be developed for new installations as well as existing ones.

Paul Wurth provides complete Electric, Instrumentation and Control (EIC) packages, including highly integrated automation solutions as integral part of many projects.

Solutions are modular and respond to customer requirements and standards.

Our scope of supply includes:

- Engineering, Supply, Services and Expertise
- Complete EIC package:
  - Level-0—electrics & instrumentation
  - Level-1—process control & condition monitoring
  - Level-2—process models & expert system
  - Level-3—plant management & optimisation

Paul Wurth has a solid global presence in all the major steelmaking markets with worldwide references in Automation.
The Paul Wurth Group is today one of the world leaders in the design and supply of complete plants, systems and processes as well as specialised mechanical equipment for

- **the iron & steel industry:**
  - Blast Furnaces & Auxiliary Plants
  - Coke Making Plants
  - Agglomeration Plants
  - Direct Reduction Plants
  - Environmental Protection, Recycling & Energy-Saving Technologies

- **other industries:**
  - Systems & Equipment for Non-Ferrous Pyrometallurgy, Electrometallurgy & Residue Treatment
  - Intralogistics Solutions for Heavy Loads
  - Engineering & Project Management for Civil Construction and Infrastructure Projects


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