Optimal control with high-reliability systems

High-speed Control Systems for Metal Plants

Enabling stable operations of the processing on bar steel rolling lines by using optimal monitoring and control of electrical equipment.

Our solutions provide optimal systems based on the standard packages for iron and steel plants and non-ferrous metal plants that Fuji Electric has developed with expertise cultivated over many years.

**[Benefits]**

- Introduction of highly reliable electrical equipment
- Coexistence with high-speed control and monitoring control
- Reduction of specific energy consumption through efficient usage
- Stable operation and reduced maintenance

**[System features]**

- Standard packages for metal plants can be combined with components according to the target facility.

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**Process line**

- Master control
  - Speed and tension control
  - Diameter calculation and correction
  - Automatic deceleration
  - Load sharing
  - Elongation control
  - High-speed drive control

- Individual control
  - Mode setting
  - Auxiliary equipment control
  - Continuous single dimension control

- Overall control
  - Weld point tracking
  - Data control
  - Display and setting
  - Alarm control
  - Display and setting
  - PCI and PCD management

**Bar steel rolling line**

- Master control
  - Mill interlocking speed control
  - Loop and kicker control
  - Minimum tension control between mills
  - Spindle position control
  - Impact drop suppression control

- Auxiliary equipment control
  - Shear blade position control
  - Split cut control
  - Cooling bed delivery control
  - Numerical setting and mode conversion

- HMI
  - Status display
  - Alarm management

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**Components**

- Controllers
- Motors
- Drives
- HMI

**Target facilities**

- Continuous annealing furnace
- Surface treatment equipment
- Mill line
- Dividing shear
[Functional overview]

- **High-speed drive control packages (Drive Master Controller (DMC))**
  Various standard-equipped control functions for high-speed control of drive units to provide stable operation and maintenance.

- **Individual control packages**
  Optimal control with minimum workload and cost by combining standard packages according to equipment requirements.

- **System construction including computers (L-2)**
  Computer packages for operation management, and data collection packages that can analyze operation status on time axis or product axis are also available.

[Introduction example]

- **Continuous hot-dip galvanizing line**
- **Aluminum surface treatment line**
- **Continuous surface treatment line**
- **Continuous annealing line**

[System configuration]