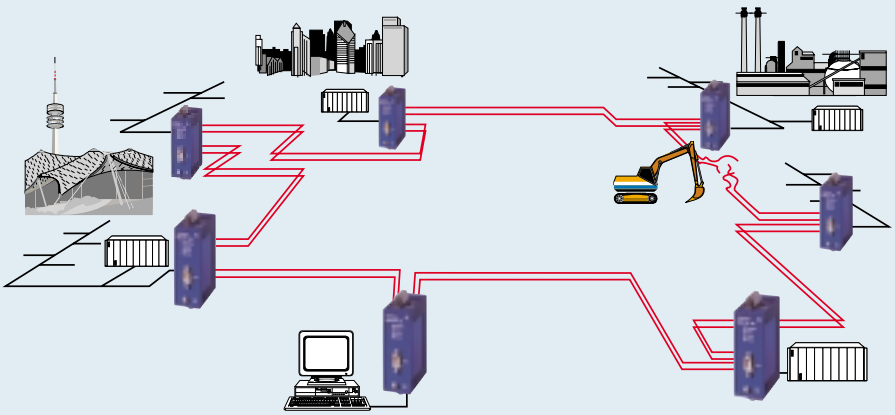
HCB "Holderbank" Cement and Concrete

The Project

HCB "Holderbank" Cement und Beton (cement and concrete) is a company in the building materials industry. Among its core competencies are the cement manufacturing, gravel quarrying, and concrete manufacturing. HCB is a subsidiary of the worldwide operating building materials group "Holderbank" with a workforce of approx. 1,600 employees in Switzerland as well as in neighboring countries. 700,000 tons of cement are produced annually in the cement plant in Siggenthal (Switzerland).

Network topology with Profibus



Key product

Profibus module OZD Profi

Photo of the HCB Cement Plant in Siggenthal

Factory Automation

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Project description: HCB "Holderbank" cement and concrete

All process signals are measured by decentralized I/O devices in the field and fed to the PLC with the Profibus DP. Data is transmitted over copper and fiber optic cables. For fiber optic transmission, HCB uses the Hirschmann OZD Profi G4a modules.

The raw material for cement production is taken from a quarry located 5 kilometers away, crushed, and transported on conveyor belts to the plant. Here the raw material is ground and set. In a rotating tubular kiln, the raw meal is processed daily into 2,000 tons of clinker. The kiln is heated with heavy oil, coal, and alternative fuels. Clean waste air and energy regeneration enjoy the highest priority at HCB. After baking, the clinker is mixed with the plaster and other ingredients and then ground into cement in the cement mill. From there it is filled into sacks in a modern packaging facility.

Project parameters / Requirements / Solution

For HCB, a uniform automation concept and a complete standardization of the automation components are extremely important. High availability, safety, simple startup, maintenance as well as troubleshooting capabilities are required elements of this concept.
Signals must be sent over long distances and then often through areas exposed to high electromagnetic radiation such as areas near drives and frequency converters. On the tall silo building, there is also a high risk of thunderstrikes. The company network topology is made up of several optical rings as well as a small number of star-shaped segments. The data rate ranges from


Photo of the HCB Cement Plant in Siggenthal

187.5 Kbits/s to 1.5 Mbits/s. For safety reasons, it is important that the redundancy is monitored. Monitoring is carried out over an error reporting contact on the OZD Profi device which reports failures immediately. This prevents unscheduled operation interruptions and ensures effective error correction.
HCB has very positive experiences using Hirschmann devices.

Why Hirschmann?

In summary, the following factors were decisive for choosing Hirschmann devices:

- Ring, star-type, and line topologies possible, including redundancy
- Fast error detection and error localization over signaling contacts
- Simply assembly since rails can be snapped onto DIN rails
- Fast and simple startup
- Sturdy and compact design
- Long service life

Further Hirschmann Application Notes:

- Connectivity
- Enterprise Networking
- Automation Networking
- Factory Automation
- Process Automation
- Transport Automation

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