



A Rockwell Automation Company

Cargill Ltd. Hazard Monitoring System

The Client:

Cargill Ltd. operates a grain terminal located in Sarnia, Ontario, which handles mostly corn and soybeans from southern Ontario suppliers.

Commodities are transported to and from Cargill via truck, train and ship.

The Requirement:

A conveying system made up of 22 conveyor belts plus numerous legs, lofters and drags handles the transporting of the grain to and from the carriers and inside the terminal itself. Alarm situations on the belts, legs, lofters and drags in the terminal's grain handling system needed to be monitored in the case of some type of mechanical

breakdown or other hazardous situation. In the case of a problem, an operator must be notified as to what type of problem has occurred and when it happened.

The Design Solution:

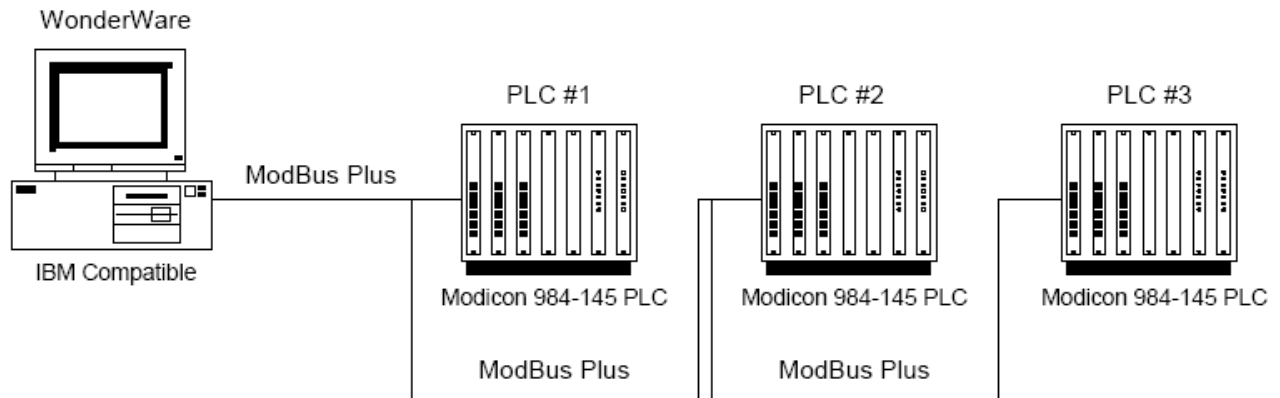
An InTouch Wonderware MMI system has been installed on an IBM PS/2 computer and an alarm monitoring page was developed to display alarm conditions detected by three Modicon 984-145 Compact PLCs which it communicates with via Modbus Plus protocol. The PLCs monitor rub sensors and bearing temperature sensors on all conveyor belts, lofters, legs and drags in the system, and belt speed sensors for all belts. When a bearing or rub sensor detects an alarm condition, the date, time, and alarm description is displayed on the alarm screen on the computer and an alarm light and buzzer are activated to notify the operator. If a conveyor belt is running at less than

95% of its proper operating speed, an alarm is displayed on the alarm screen. If the speed drops below 90% of operating speed, the belt's start permissive is dropped, shutting down the belt and disabling a restart until an operator acknowledges the alarm on the alarm screen. All alarm conditions, acknowledgements, and return-to-normal events are also stored on the hard drive of the monitoring computer for future reference.



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System Specifications:

- InTouch Wonderware MMI
- 3 Modicon 984-145 Compact PLCs
- Modbus Plus Protocol
- 300 Discrete I/O

For further information or to contact a Hinz office near you, please check our website at:

www.hinz.com