



A Rockwell Automation Company

Koch Pipelines Ltd. Truck Offloading Terminal Automation

The Client:

Koch Industries is the second largest privately held corporation in the US with more than 13,000 employees worldwide. To grow its business worldwide, Koch embraces a market-based philosophy in refining chemicals, hydrocarbons, crude oil services,

mineral services, energy services, capital services, road and construction materials, chemical technology, and agriculture. Bow River Pipe Lines Ltd. is a wholly owned subsidiary of Koch Industries.

The Requirement:

The reduction of data entry errors is the main driving force for automating the crude off-loading facilities at Koch-operated terminals. Handwritten waybills were optically scanned into computers and data entry operators entered each waybill into the corporate databases. Eliminating data entry and implementing

more accurate field data capture while reducing the turn around time from waybill to payment were the main requirements of the new system.

The Design Solution:

Hinz proposed the TerminalMaster system as the basis for the off-loading system. TerminalMaster is a modular software package that takes advantage of standard Microsoft software tools to provide a flexible system for terminal automation. TerminalMaster provides site security, data gathering, loading control and reporting.

Koch built on this foundation by adding site customization, and host system reporting and control to the system. Through configuration screens the system can be set up to accept data inputs from the field or entered by the driver. Density, temperature and water cut can be entered by the driver or gathered from field devices. Offloading information is sent to the host system via modem. The field system is configured to send waybills to the host by quantity and time schedule. Offloading information is printed on waybills carried by the truck drivers. The waybill is inserted into a slip printer which prints directly onto the provided bill.

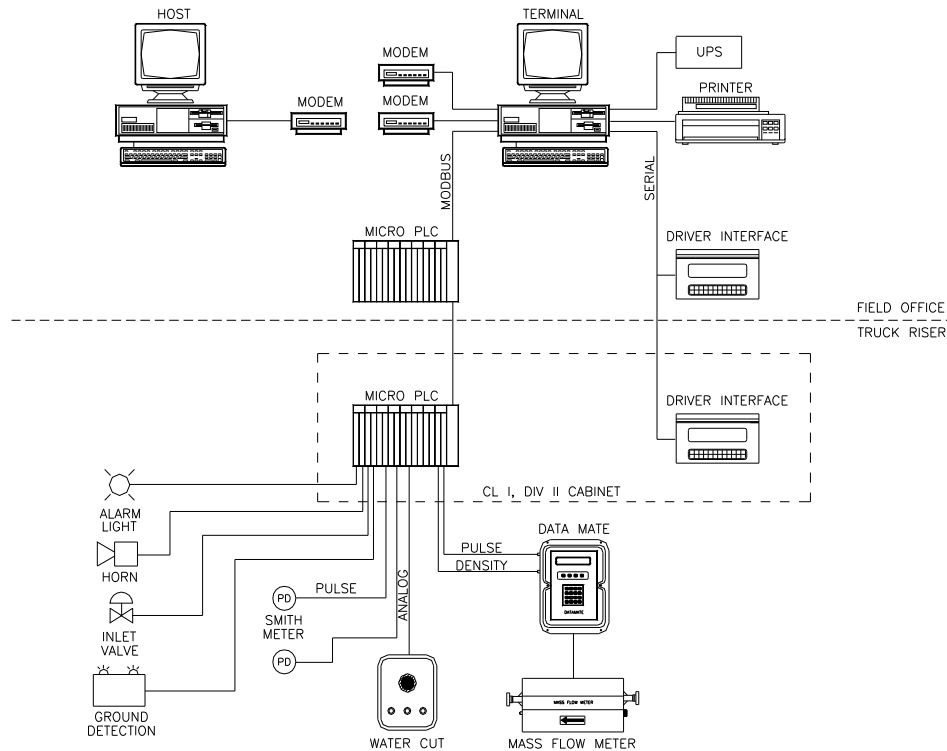
The TerminalMaster host system interfaces with the corporate Truck Information Gathering, Reporting, System (TIGRE). TerminalMaster sends waybills gathered from the field to the TIGRE system. It also sends database updates and support information from TIGRE to the field. All field systems are supported and configured remotely from the host system. Database changes additions and deletions are sent to the field on a scheduled basis.

The truck drivers' interface to the system is at a Class 1, Division 2 panel located at each riser. The panel contains a 2x40 character display that accepts alphanumeric entries. The driver may search the database for customers or battery numbers by supplying part of the EUB code or customer name. Indicating lights on the panel display the state of permissives, for example, truck grounding and fire detection.



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System Specifications:

- Modicon Micro 612 as "child" PLC at each Loading Rack
- 3AI, 8DI, 6DO, 1 High Speed I/P
- Compaq DeskPro, 32 MB Pentium 166 c/w 1.6GB HD, and Digi Board 4 serial port expansions
- Driver Interface: Maple Systems Map 450, RS-232/485 multi-droppable
- Computer Operating System - Windows NT 4.0
- API Calculations in C
- Visual Basic 4.0
- Metering Pulse Input
- US Robotics 33.6KB Sportster Modems
- Microsoft SQL Server Database
- Spartech Ground Detection Unit
- PC Anywhere for Remote Support

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

www.hinz.com