



VMI

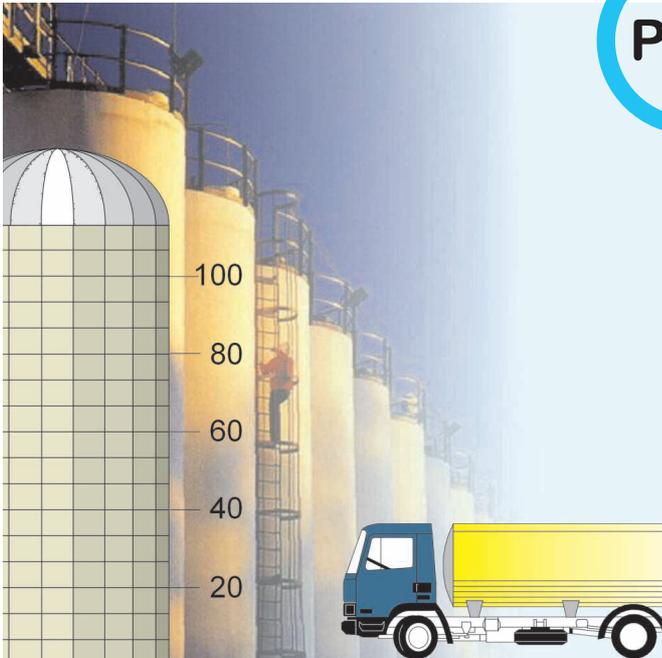
Datalogger application Vendor Managed Inventory

Measurement and recording of filling levels with a datalogger

Data transmission to central station via modem

Data processing for an existing logistics system

Monitoring of minimum levels plus „Autocall“



KEY WORDS

VMI, vendor managed inventory, stock control, logistics, minimum stock levels.

DESCRIPTION

Vendor Managed Inventory (VMI) represents a concept of material supply, in which the flow of goods is controlled by the vendor instead of the customer. A general agreement between the parties makes the supplier responsible for keeping a tank, silo, or storage section of the customer filled with a particular product.

VMI is not only used in the retail trade, but is also finding its way into the manufacturing industry more and more. In such an agreement, maintaining a minimum level of material is the customer's most important requirement, so that his production process is not endangered at any time. Similarly, the supplier is interested in planning and using his production and transport capacities optimally.

As soon as the supplier has access to regular data about the stock levels on the customer's premises, he is able to determine average consumption values, for example. This allows him to work out an individual and detailed supply schedule for the customer.

IMPLEMENTATION

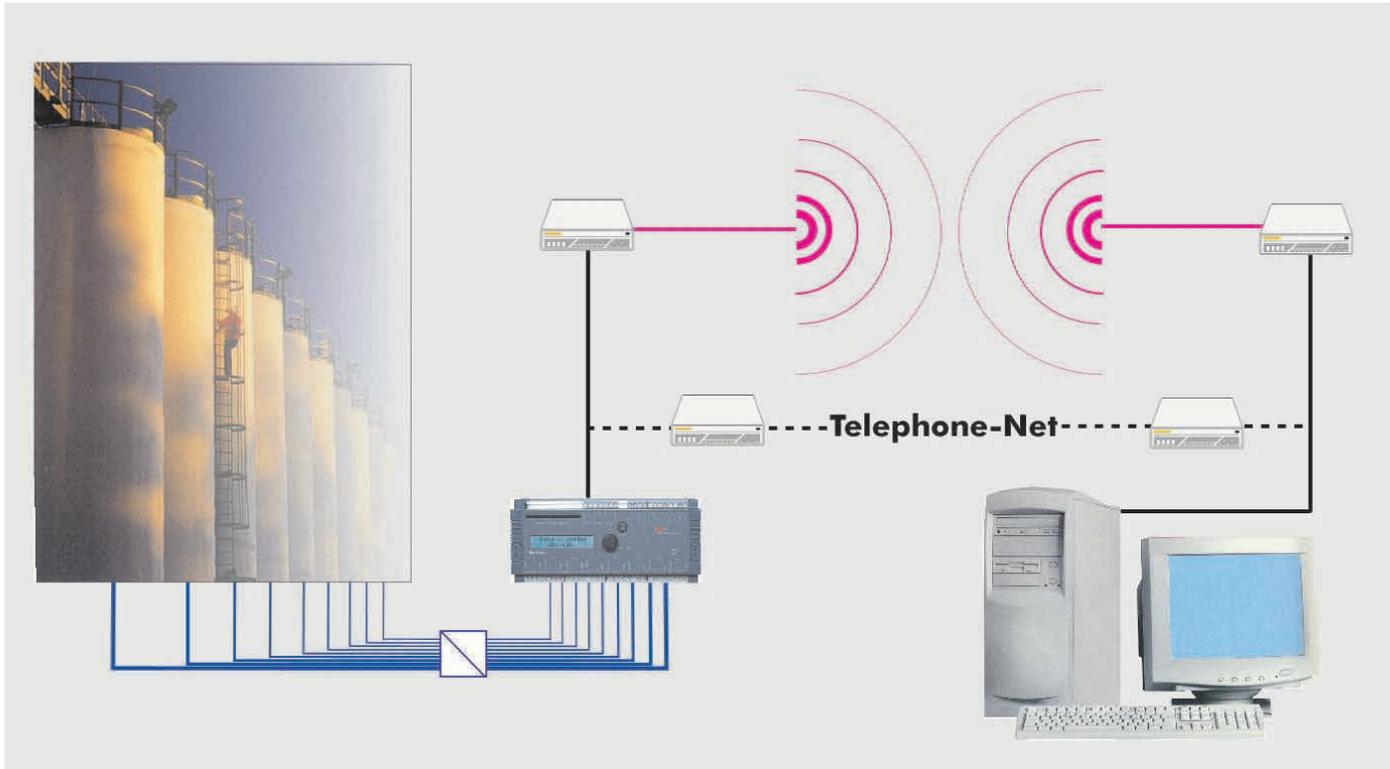
Bayer AG in Leverkusen decided to install a system with its customers, that measures the filling level of storage tanks remotely. Subsequently, the data are transmitted automatically to a central station for further processing in the existing logistics system. This procedure can be applied to every application in which stock levels can be measured electronically. For example, grain silos in the foodstuffs industry, tanks in petrochemical plants, granulate storage bins in plastics processing, etc.

Using data acquisition modules supplied by Gantner Elektronik GmbH, and the „Trendcom“ software package, PMA was able to provide a solution. If necessary, pressure, differential pressure, or level sensors were installed to measure the filling levels. The measured values are converted into standard 0/4...20 mA or 0...10 V signals, and passed to the Gantner datalogger IDL 100. The datalogger applies a time mark to each value, and stores it in the buffered internal RAM or on a PCMCIA card. The datalogger has 8 analog inputs that are configurable for current, voltage, or for the direct connection of thermocouples or resistive sensors. In addition, the unit has 6 digital inputs/outputs that can be configured for status signals, limit contacts, frequency, or as counters. The number of inputs/outputs can be extended with additional modules.

Via a modem (telephone, GSM, or even radio for short distances), the data stored in the IDL 100 datalogger can be accessed easily. In future, this function could also be executed via the Internet. For the application described here, the communication software „Trendcom“ was installed in the vendor's (supplier) central station. At freely defined intervals, the central station calls the IDL 100 datalogger on the customer's premises, reads the stored data on filling levels together with date and time mark, and saves it as an ASCII file.

Subsequently, the vendor processes the data with his own logistics software, calculates the consumption, and plans the next delivery for this customer. In this way, the vendor not only optimizes and ensures the supply of material to the customer, but also his own production, storage, and transport logistics. Order processing is handled by the logistics system in the usual way.

„Autocall“ function for increased safety
The IDL 100 datalogger features an „Autocall“ function, which automatically transmits a signal to the central station, as soon as a minimum level is reached. The events that trigger the „Autocall“ function can be determined through mathematical combinations of measurement values. Up to three phone numbers are available for the automatic call.



If the first number is not accessible, the datalogger automatically dials the next number. By monitoring the minimum levels, an additional safety margin is provided for customer and supplier vendor, and prevents a „zero stock“ situation. Similarly, the „Autocall“ function can also be used to transmit an SMS. Gantner's configuration software ICP 100 ADV is available for simple remote maintenance, configuration, and servicing of the dataloggers installed on the customer's premises.

Benefits for both partners at a glance:

Customer benefits	Supplier benefits
The supplier handles all the delivery operations.	Optimization of production, storage, and transport logistics.
Monitoring for minimum levels and the „Autocall“ function ensure that sufficient material is always available for production.	No „rush orders“ with associated high costs.
No „rush orders“ with a surcharge.	Close ties with the customer.



PMA
 Prozess- und Maschinen- Automation GmbH
 P.O Box 31 02 29
 D - 34058 Kassel
 Tel.: +49 - 561 - 505 1307
 Fax: +49 - 561 - 505 1710
 E-mail: mailbox@pma-online.de
 Internet: <http://www.pma-online.de>

Your local representative