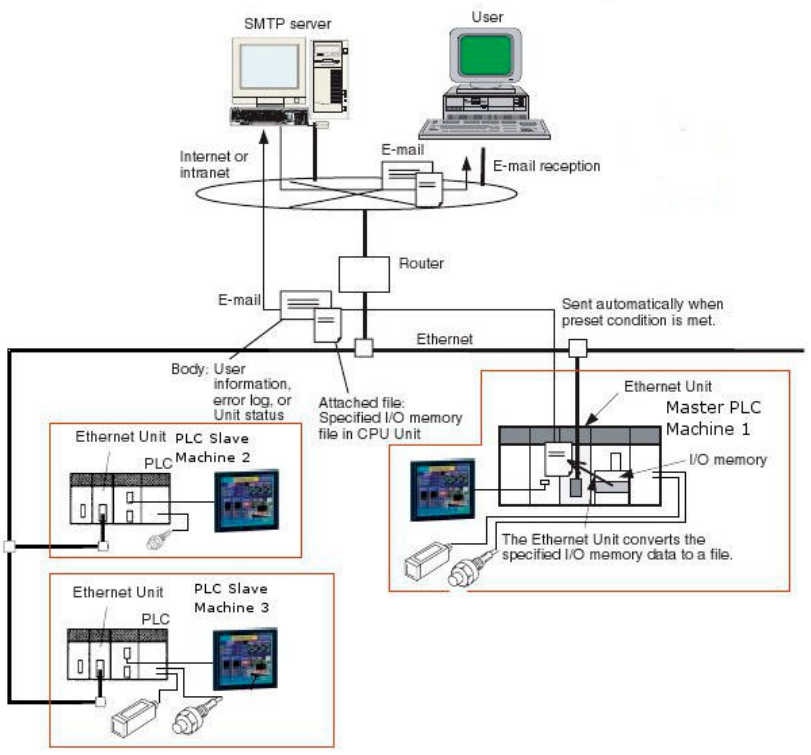
PRODUCTION TELECONTROL

The remote control systems that we produce, allow you to detect the production data of machines used for production. These devices are particularly useful for companies with several production units, especially for plants relocated in foreign countries. Our monitoring equipment is applicable to both machines of recent production that older machines. We do not need to modify the software of machine to check: we install on the machine a PLC to detect , with both existing sensors or and with new installation sensors, the necessary data to give the manager a comprehensive view of manufacturing production.



Schema telecontrollo di 3 macchine

Our devices operate in two ways:

- receive e-mail
- send e-mail

System functionality in sending

The remote control system lets you send emails at predefined intervals with the production data. Data can be stored in a text file attachment, or in the message body. The addresses for sending e-mails can be differentiated into two groups: For example, to a group of addresses can be send lower-priority messages (email to the staff of the factory), to a second group can send high priority level messages (production managers at headquarters). Each group of addresses should be a maximum of 50 characters. For every customer we can set up times and events of sending messages, the type of data and its format. An example of remote control could be as follows:

The system sends to intervals 4 hours (day and night) the total production, average and maximum production rate, the minutes of arrest. The production data are divided by contract. For each change contract is sent an email with the new contract loaded.
For every system reboot due to power failure or shutdown, will send a restart message with time off and time to restart.
If the factory has a line with UPS, emails that indicate the voltage drop in the plant can instantly send.
Daily report with date and time when the machines went into alarm and time alarm on.
Send email to periods of stopping production of a machine above a predetermined value (eg 1 hour).
Sending an email when a machine is switched off or no longer communicate with the central system.
Send email to indicate long periods with production too low.
Sending emails differentiated depending on the user.

Functionality of the system for reception

The system is able to receive e-mail: the mail is downloaded at predefined intervals. Messages can contain commands to the operator on any machine. The receipt of a command on the machine in question involves the activation of an audible signal and the simultaneous opening of a page on the operator panel. The operator will answer the question on the page, this response is sent by registered mail to the headquarters and the tone ceases.

System Architecture

Communication server that would perform the following functions:

- master communication with PLCs installed on each machine. Cyclically reads the status of each machine.
- manage of transmission email. At regular intervals or in case of predetermined events, send email to one or both sets of addresses.
- Managing the reception of emails. Periodically the mail is downloaded from a mailbox. The email must contain commands to the system. Commands may be requests for the operator, or may contain data to change the settings of the system.
- communication server can also perform the control of a machine on which can be installed.

Slave unit

- Receives signals from the machine on which it is installed, in order to obtain the data necessary to control production. The signals can be taken from signals already present on the machine (by

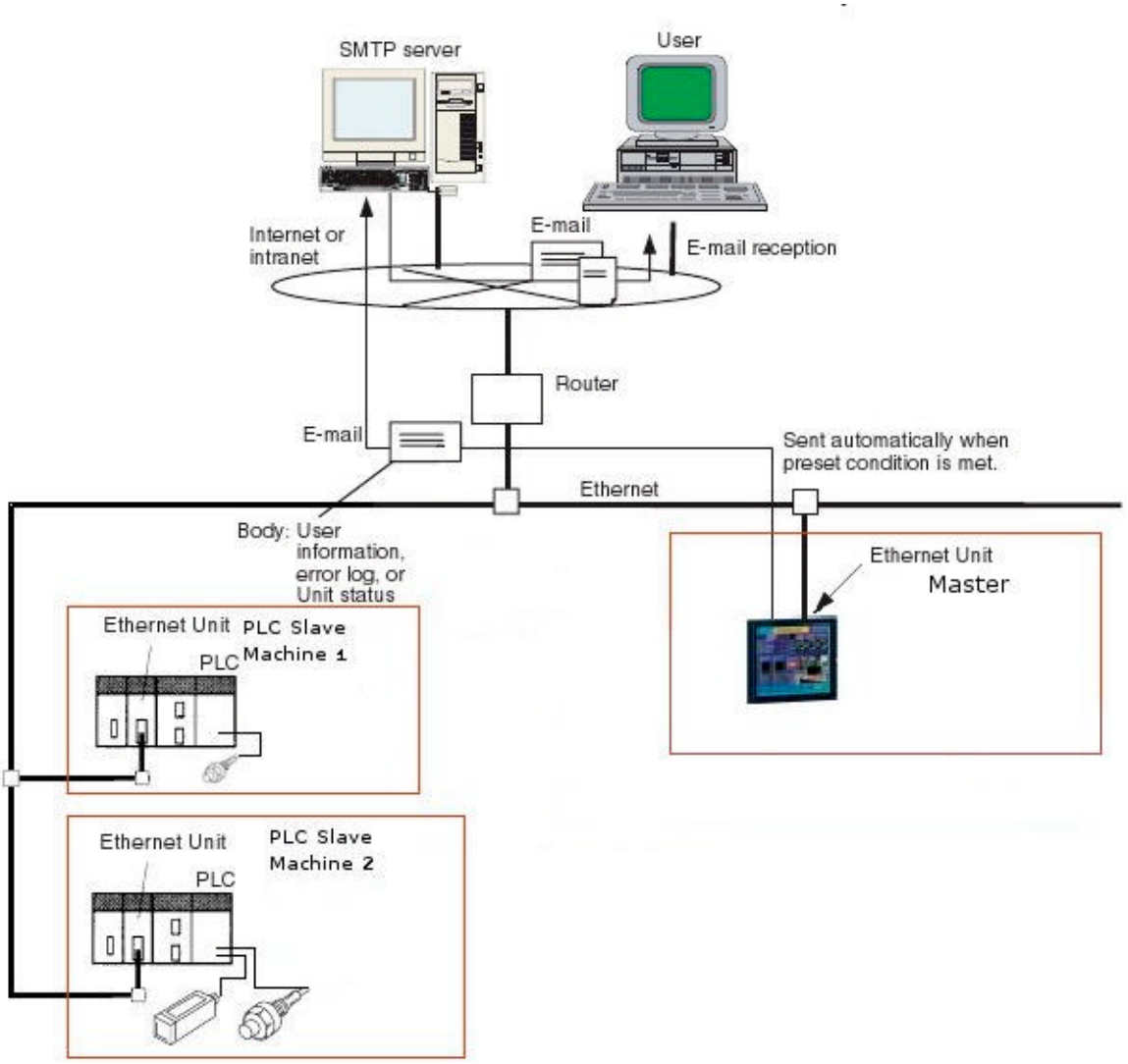
entering the opto isolators to duplicate the signal without fit in the existing electrical system). Where it is necessary we insert sensors to detect the needed variables.

- Communicates with an operator panel connected to it to receive data on order or others by the operator.
- Communicates with the server via Ethernet to communicate all data to send, and receive commands from the email received.
- Alerts the operator with a buzzer which is activated by a request for information sent by email.

Ethenet network: the system uses the wired network already present in the plant.

Simplified remote control of the production

The system that we describe below allows the monitoring of production machinery in remote site factories cheaper than the model described above. This solution has some limitations compared to the previous one.



System functionality in sending

The system allows send to predefined intervals email containing production data. The data are contained in the message body. The addresses for sending e-mails can be differentiated into groups:

eg. to a group of addresses can be sent to lower-priority messages (email to the staff of factory) to a second group can send messages to high priority level (headquarters).

An example of remote control is as follows:

The system will send to intervals 4 hours (day and night) the total production, average and maximum production rate, the minutes of arrest. The production data can be divided per order. For each change order is sent an email with the new order loaded.
For every system reboot or shutdown due to power failure, will send a restart message with time off and time to restart.
If the factory has a line with UPS it's possible instantly send emails that indicate the voltage drop in the plant.
Daily report with date and time when the machines went into alarm and time alarm active.
Send email to periods of stopping production of a machine above a predetermined value (eg 1 hour).
Sending an email when a machine is switched off or no longer communicate with the central system.
Send email for prolonged periods of production too low.
Sending emails differentiated depending on the user.

Functionality of the system for reception.

Unavailable

System Architecture

Panel Master who will perform the following functions:

- master communication with PLCs installed on each machine. Cyclically reads the status of each machine.
- manage of email transmission. At regular intervals or in case of predetermined events, send email to one or both groups of emails.
- Entering all data relating to production whole plant: operators will have to head to the device to enter the order being processed on each machine.

Slave units:

- Receives signals from the machine on which it is installed to obtain the data necessary to control production. The signals can be taken from signals already present on the machine (by entering the opto isolators to duplicate the signal, without fit in the existing electrical system). Where it is necessary we insert sensors to detect of variables needed.
- Communicates with the master unit via ethernet to receive the data on order or others by the operator.
- Communicates via Ethernet with the master panel to communicate all data to be sent.