tech-info

► *DynFAS DL*

High-availability,

fast long-term logger

for programmable

control systems

BMA

DynFAS DL

BMA Automation goes IT!

High-availability PLC cycle-synchronous data logger for long-term data archiving

As part of a BMA AG research project, BMA Automation GmbH has developed a data logger that meets the most demanding requirements in terms of reliability, logging intervals and logging capacity. Although a host of data loggers is available on the market, none of the systems is able to meet the very high requirements.

The data logger runs as a software component on a Simatic® PLC, which thus serves as an active data source. The logged data are analog values that are supplied by different measuring sensors, and process data that are transmitted via a data bus from the factory to the PLC. The produced data are scaled and stored on an FTP server, using the FTP client of a communication processor. The FTP server runs on a stable Linux operating system; a RAID system provides for the necessary redundancy, should one of the hard disks fail.

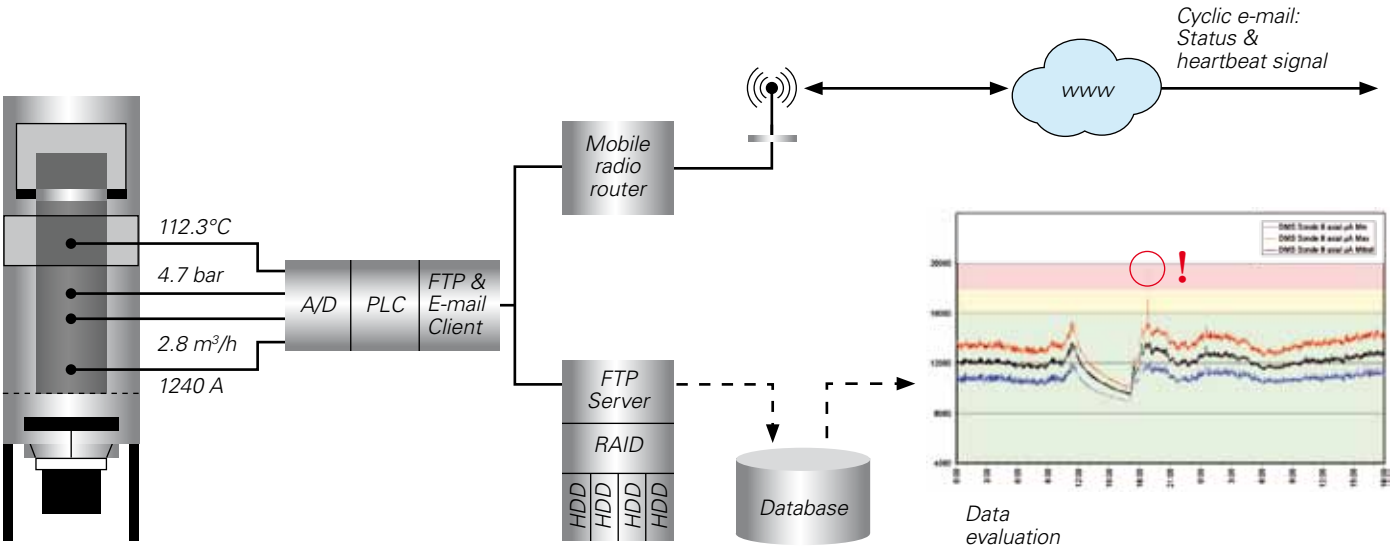
While data are being logged, the PLC uses the e-mail service of the communication processor to send e-mails at regular intervals. They contain a list of the logged data (minimum, maximum and mean values of every measured value), in addition to PLC status data. For connection with the Internet, an industrial mobile radio router is used. Incoming e-mails, which are interpreted as heartbeat signals, serve to demonstrate that the system is working. With e-mail analysing and remote service features, the function of the data logger can be tested from any computer anywhere in the world, provided it has access to the Internet.

A UPS that comes with the data logger ensures that power failures or fluctuations in power supply quality have no effect on the data logging process.

There are no more excuses for incomplete logs .....

Continuous long-term archiving of data recorded for industrial drives or drive elements

Tedious and error-prone local data recording is often no longer required



Schematic diagram

Data logger performance details:

- Logging intervals of 10 ms plus (up to 100 Hz) are possible
- Logging capacity >100 GB; redundant data memory
- Operation demonstrated with heartbeat signals via e-mail
- Remote servicing via the mobile communications network

Possible applications are:

- Demonstration of machine performance to business partners
- Determination and verification of warranty conditions
- Demonstration of correct operation
- Recording of values for R&E projects and continuous improvement processes

Product properties

- High availability
  The use of tried and tested Siemens automation technology, together with Linux IT components, rugged automotive hard disks in a RAID array, and heartbeat signal features prevent permanent and unidentified system failures.
- Heartbeat signal
  The system sends e-mail messages with status and logged data (positive message) at cyclic intervals. E-mails that fail to arrive suggest that there may be a system failure. With these failure notifications, operators are able to react more quickly.
- Short logging intervals
  Data can be logged at intervals of 10 ms plus (up to 100 Hz).
- Long-term logging
  Data can be logged for many years.
- Data evaluation
  The recorded data can be uploaded into a database, both on-line and off-line, and are readily available for evaluation.

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