Keep an eye on process values and detect trends!
MOTIVATION
Complex production processes

Superior products are often manufactured using complex processes which require the utmost precision. Adhering to production parameters and evaluating statistics aimed at continuous improvement guarantee high production quality and low scrap rates.

While the continuous control of production parameters, process values and their recording can now be taken over by modern machines and plant controls, the HYDRA module Process Data (PDV) offers functions that go far beyond this. The complete integration of all MES applications on the basis of a central database allows for the correlative examination of other data. The comparison of data to orders, articles, material batches or tools and process values makes a valuable contribution to optimize your production.
To collect and further process values

The most important elements of the HYDRA Process Data module are data collection, data processing, and data visualization. HYDRA PDV covers a broad range of functions:

- Automated recording of process values of all types
- Online visualization for the office client and at the shop floor terminal
- Displaying process values in the machine and plant layout
- Analysis of process data for any period of times and in correlation with other machines
- Logging all process disruptions and events
- Detailed evaluations and analysis tools
- Long-term archiving of process data
- Integration escalation management when violating limit values
General use of process data

In contrast to instruments which only visualize process data, e.g., in the machine control, HYDRA PDV can use the recorded process values to set them in correlation with other production data or to process them further in other MES applications:

- Comparison of process values against order, machine, material and tool data from other MES applications
- Further processing of process values in CAQ applications, e.g., in-production inspection
- Visualization of process data at shop floor terminals where information from other MES applications is displayed or entered
- Complete documentation of process data and presentation of quality data in certificates
Online visualization, evaluations and analysis

Depending on the specific requirements, the HYDRA PDV visualizes both recorded and processed data in real-time directly at the shop floor terminals, on large screens in the production area or displayed on an employee’s PC in the office. In addition, the recorded process data is archived for any period of time that is necessary to be able to analyze the process data later on:

- Graphic process analysis including evaluating compressed process data
- Logs for relevant process events
- Statistic process analysis based on control charts
- Failure mode analysis including Pivot function
- Online visualization for the office client and at the shop floor terminal
- Correlative evaluation of process and machine data
Master data and configuration

The definition of the process parameters that are to be recorded is carried out in the so-called characteristic catalog. Detailed data can be stored for each measured variable such as a physical unit, formulas for calculation, random sample intervals, filter settings for measurements or visualization, and for process limits. In addition to these features, HYDRA PDV can also be broadly configured:

- Definition of collection rules
- Specification of intervention and tolerance limits and measuring intervals
- Apply and maintain processing rules for process data
- Analysis of processes based on identification tags
- Simple configuration of control charts
- Archiving the process data over any time period including long-term evaluations
- Flexible escalation management to record defined events
Every MES solution is as individual as the company using it. An MES must be of a modular design and largely configurable in order to turn field-tested standard functions into tailor-made solutions.

Extensive requirements covering all business sectors and levels must be considered:
From user-friendly collection and information functions for operators to reliable statistics for the management.

The examples for HYDRA PDV applications illustrated in this brochure are a combination of standard MES products by MPDV. These products, characterizing a state-of-the-art MES, can be selected needs-based and integrated without interfaces:

- **Shop Floor Integration Services**: Interfaces to machines and production lines plus data collection and information functions for operators
- **MES Applications**: Powerful programs to process data and functions for data maintenance, detailed planning, monitoring and controlling
- **Smart MES Applications**: For usage on mobile devices and in web browsers
- **MES-Cockpit Applications**: Dashboards for general KPIs
- **Enterprise Integration Services**: Basic functions and interfaces to seamlessly integrate the MES into an existing IT landscape