

Plant Historian MDE

Machine Data Acquisition (MDA)

Plant Historian MDE – machine data acquisition – is a recording, monitoring and analysis tool for machine data.

Complete acquisition, recording and the transparent visualization of relevant information ensure efficient monitoring and evaluations of machines and processes. They build the basis for the recognition of optimization potentials and continuous process optimization.

A simple, visual presentation of the collected machine data and an intuitive use of the system generate transparency for the production process and the continuous improvement process (CIV). The recorded machine data allow the calculation of different key figures and benchmarking – depending on the requirements.



Connection via standardized interfaces:

- M-Bus to TCP/IP
- Modbus-Interface (e.g. via RS485)
- Modbus to TCP/IP
- 4–20 mA or 0–20 V to TCP/IP (OPC, Modbus etc.)
- Standardized OPC connection to the PCS/PLC world

Visualization of KPIs, abstract presentation of machine data (e.g. traffic light function for quality, performance or consumption of a machine)

Benefits

- High availability of the capital goods as a result of faster troubleshooting (monitoring and report of the machine status)
- Monitoring, evaluation and archiving of machine data (traceability)
- Availability of data for the continuous improvement process (CIP)
- Control of machine runtime, standstills, productivity (OEE)
- Central SQL database, central application server, no client installation
- Multi-project and multi-user capabilities, multilingualism

Functions

- Long-term archiving of machine data
- Calculation of key figures and benchmarking, e.g.
 - Overall Equipment Effectiveness (OEE)
 - Process Capability Index (Cp/CpK)
- Central collection of technical operating data (machine data acquisition)
- Acquisition of process and production data
- Transparent monitoring and analysis of machines
- Overview of the status of all machines, e.g. analysis of the work pace, Overall Equipment Effectiveness (OEE)
- Immediate alarming per sms, email or phone in cases of disturbances
- Transfer of data to higher ERP systems



Networked visual presentation of decentralised machine and production units, e.g. central visualization of all dosing furnaces



Plant Historian

Modular Software Suite

Over many years, the MES software series Plant Historian has been applied in international industrial enterprises in different countries in Europe, Asia and South America. Best practice has been the key for continuous development and improvement of Plant Historian.

The system can be connected to any kind of PCS/PLC/ERP system. Optimization potential can be early and continuously recognized and sustainably realized.

Benefits

- Company-wide central solution for the analysis and storage of process data
- Increased plant safety and availability (OEE)
- PCS independent, central infrastructure
- Identification of bad operation processes
- Cost saving concerning hardware, software licenses, service and support costs
- Predictive Maintenance
- Golden Batch Analysis, recognition of production patterns

Technologies

- Standardized PCS/PLC/ERP interfaces
- Independence of process control system
- Connection via OPC, printer interface of any control system/controls e.g. of Siemens, Emerson, Honeywell, ABB, Foxboro
- Long-term archiving – with optimized memory and runtime – of A&Es, operator interventions and batch protocols
- Central SQL database, central application server
- Scalable, intuitive system



	Plant Historian AM	Plant Historian AR	Plant Historian PDA	Plant Historian DIG	Plant Historian RM	Plant Historian EM	Plant Historian MDE	Plant Historian OEE	Plant Historian HMI	Plant Historian SB	Plant Historian PM	Plant Historian PPS	Plant Historian PTT
	Alarm management for increased plant security	Alarm rationalization for increased plant safety	Process data archiving: recording, analysis and storage	Digital data recording	Reporting and report management	Energy controlling and monitoring according to ISO 50001	Machine data acquisition	Overall equipment effectiveness	Visualization of manufacturing/production processes	Digital shift book	Predictive Maintenance	Production planning scheduling	Traceability of process data
Benefit	<ul style="list-style-type: none"> • Increased plant safety and availability • Identification of bad procedures • Support for alarm reduction 	<ul style="list-style-type: none"> • Identification of bad operation processes • Statistical evaluation of alarm frequencies and reaction times 	<ul style="list-style-type: none"> • Quality management and process optimization • Transparent recording of process data • Transparent visualization of the plant condition 	<ul style="list-style-type: none"> • Safe and secure data recording, reactions and data storage • Support for internal and external audits • Escalation in cases of limit value violation and indication of process instructions 	<ul style="list-style-type: none"> • Company-wide, central solution for report management • Relevant information for different recipients • Central tool for the distribution of information 	<ul style="list-style-type: none"> • Transparency of energy data • Automated reporting of energy data • Reduction of energy cost • Sustainable management • Enhanced image 	<ul style="list-style-type: none"> • Transparent presentation of the machine status • Immediate identification of divergences • Increase of machine availability 	<ul style="list-style-type: none"> • Transparent presentation of production data • Immediate recognition of divergences • Increased availability due to direct information forwarding concerning the machine/plant status 	<ul style="list-style-type: none"> • Flexible plant monitoring • Abstract display of plant status and information aggregation • Networked presentation of machine and production units • Transparency due to information networking (Big Data) 	<ul style="list-style-type: none"> • Reduced data acquisition, reporting and research efforts • Options for statistical evaluation • Easy handling 	<ul style="list-style-type: none"> • Reduction of downtimes • Predictive planning of maintenance measures • Planning reliability in production • Easier capacity planning concerning availability of plants, material and staff 	<ul style="list-style-type: none"> • Support for production planning (orders, material, staff) • Warehouse supply and demand information • Order control • Structuring of the manufacturing process • Capacity planning 	<ul style="list-style-type: none"> • Traceability of the collected process data • Error-free flow of material to the highest possible extent • Planning and control of the material flow • Right material at the right production unit
Functions	<ul style="list-style-type: none"> • A&E frequency analysis and distribution • KPI reporting according to ISA 18.2, NAMUR NA102 and EEMUA 191 • Direct alarm forwarding per SMS, mail of phone • Visualization of upcoming/past disturbances 	<ul style="list-style-type: none"> • Intuitive classification of alarms • Basis for the Management of Change process (MOC) • Validation of rationalization measures (comparison of planned and actual data) • Automatic generation of alarm master data 	<ul style="list-style-type: none"> • Numerous analysis tools and display options • Trend display with visualization of the related messages issued by the process control system and direct indication of limit value violations 	<ul style="list-style-type: none"> • Manual or automated collection of manual values • Manual or automatic reporting • Numerous analysis tools and possibilities for visualization 	<ul style="list-style-type: none"> • Output of reports as PDF or in Excel • Automated distribution to predefined recipients • Any type of reporting: shift reports, daily and monthly reports etc. 	<ul style="list-style-type: none"> • Consumption analysis • Evaluation of cost centers • Visualization options • Validation and alarming of balancing management 	<ul style="list-style-type: none"> • Acquisition of technical operating data • Calculation of key figures and benchmarking • Transparent monitoring and analysis of machines 	<ul style="list-style-type: none"> • Recording of technical operating data • Calculation of key figures and benchmarking, e.g. overall equipment effectiveness • Transparent monitoring and analysis of machines 	<ul style="list-style-type: none"> • Flexible dashboarding per drag & drop • Personalized layout saving • Multiscreen splitter • Display of alarms & events, process or machine data, OEE key figures on one surface 	<ul style="list-style-type: none"> • Documentation and recording of shift events • Individual generation of shift plans • Revision safety • Hierarchical report function 	<ul style="list-style-type: none"> • Monitoring of all data related to maintenance • Recognition of maintenance tendencies as a result of data accumulation (Big Data) • Recording of maintenance measures 	<ul style="list-style-type: none"> • Production control with order sequencing • Planning of material requirements • Lead time scheduling • Time and capacity planning • Inventory management • Availability check 	<ul style="list-style-type: none"> • Components suited for melting or foundry (temperature and dirt-resistant and unaffected by vibrations) • Intuitive user interface

