FASTEC
Software for Production

FASTEC 4 PRO – Our Solution

for the Digitalization of Your Production

reliable – modular – flexible

We digitalize factories

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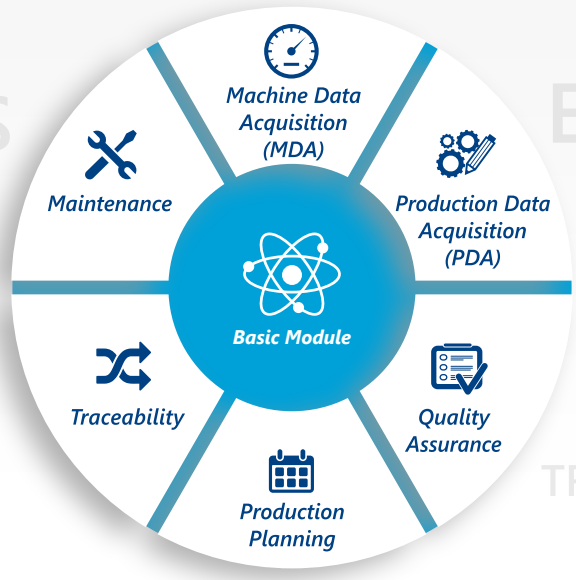
Digital Manufacturing – Flexible and Future-Proof

Industry-independent, modular, individually adaptable to your specific production processes and proven hundreds of times, FASTEC 4 PRO delivers data-based facts in real time. For fast and reliable decisions – from the shopfloor to management. Since 1995.

Our Modules – Custum-Fit with a Central Database

Diverse requirements – one solution! Building on the MES Basic Module, all FASTEC 4 PRO modules can be combined individually and tailored to your needs. The individual MES modules access a common and uniform database. In this way you always have consistent data – there are no interfaces between the modules and there is no redundant data stored. Due to the modular structure, a step-by-step and demand-oriented implementation of the software modules up to a digitalization of all areas of your entire production at one or more locations and in one or multiple languages is possible.



You only buy and pay for what you really need.

Our Additional Functions – for a Step-by-Step, Tailor-Made and Individual Development of Your Digital Production:

- Alerting
- Autonomous Maintenance
- BI-Connector
- DNC and Configuration Data
- Document Display
- Energy Monitoring
- Mobile Client
- Monitoring
- Personnel Time Recording
- OPC UA Interface
- Production Logistics
- Process Data Acquisition
- Process Messages
- Preplanning

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Interesting Facts About FASTEC 4 PRO

The FASTEC 4 PRO Client Structure – Optimally Coordinated

FASTEC 4 PRO provides you with various client concepts. You can therefore equip your production optimally, taking into account hardware and license cost aspects.

Machine Connections – Safely Solved with FASTEC 4 PRO

There are many ways to connect your machines: Whether with digital signals via I/O modules or via direct binding of the machine controller via PLC interfaces, e.g. S7, Beckhoff ADS or OPC, FANUC, Web-Services. Thanks to the variety of interface solutions, any machine can be bound to the FASTEC 4 PRO MES system, regardless of manufacturer and year of construction. We always keep an eye on the costs and benefits for you.

ERP Interfaces – FASTEC 4 PRO as a Data Hub

The MES system almost always also communicates with an ERP system that provides the order information for production. The German market alone has around 800 different ERP systems. Nevertheless, the type of interface can usually be broken down to a few communication standards - such as database tables, file transfer, XML, to name just the most important ones. A seamless exchange of information between your ERP/PPS system and FASTEC 4 PRO is indispensable. We use project-specific uni- or bidirectional ERP interfaces or our FASTEC standard interface. Of course, we also connect other systems available in your company to FASTEC 4 PRO, e.g. PZE or QS.

SAP Interfaces – FASTEC 4 PRO as a Data Hub

There are several standard interfaces of major ERP system manufacturers on the market. One of the most important interfaces worth mentioning in this context is SAP PP-PDC for which SAP also offers a certification program. The functionality of the program is limited to order data exchange and only provides a small amount of master data. This range of services is not sufficient for Detailed Planning in the MES system, as this requires the transfer of significantly more master data. FASTEC has specifically programmed its own function modules, which conform to the DSAG's (German-speaking SAP user group) best practice programming guide ABAP (Advanced Business Application Programming). These function modules are very efficient and can be adapted quickly without the support of SAP partners. To write back data, these function modules use standard SAP functions (BAPI calls). If further IT systems are used in production (e.g. QA system, tool setting system,
document management), additional interfaces may be required. Due to the large number of different systems and manufacturers, no generally applicable statement can be made in this regard. However, many of these systems provide file- or database-based interfaces.

Gold Microsoft Partner

OPC FOUNDATION MEMBER

SAP Silver Partner

Your Project – Our Solution Portfolio

Long-term cooperative collaboration is important to us – from the concept to the rollout, from the software implementation and employee training to the subsequent support during operation. First, we analyze your needs and with the help of a comprehensive, individual concept we create the foundation for your successful MES project. Your solution will then be developed and introduced gradually. During the entire course of the project, you constantly have a contact person you can rely on. We will not abandon you after the rollout. You can conveniently reach our support.

Process:

- **Detailed analysis**
- **Individual conception**
- **Central contact person**
- **Test phase**
- **Rollout**
- **Staff training**
- **Long-term support**

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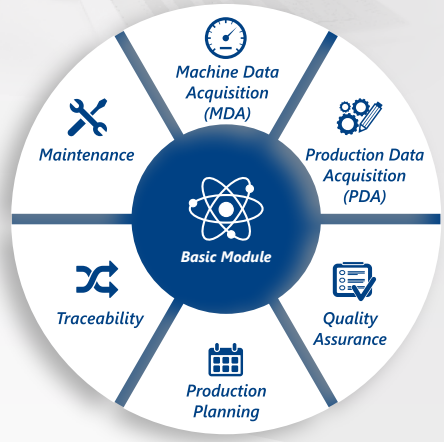
Basis Module – the Future-Proof Foundation

We support you in digitalizing your shopfloor and in meeting a wide range of requirements. Our seven modules are supplemented by Additional Functions and many functionalities. You can expand the digitalization of your production step by step. You only purchase what you need!



Basic Module

Standard

- Audit trail
- Basic/Master data management
- User/rights management
- Multilingualism
- Report Designer
- Template Designer

Additional Functions

- Test system
- Alerts
- OPC UA Server
- ERP interface
- Cloud/BI-Connector
- Online monitoring
- Machine connection
- Classifications
- Mobile Client
- View Client
- Office Client

The Most Important Functions at a Glance

- User administration including rights management on a functional level
- Master data management of resources, e.g. machines, equipment, personnel, items, work plans
- Logging of all manually made data changes and activities (audit trail)
- Print and export functions, e.g. to Excel, automatic e-mail dispatch
- View Designer for creating and customizing screen masks
- Report Designer for customization of reports

Benefits for Your Corporate Success

- Core component for your modular MES solution that can be expanded at any time
- Configurable and flexibly expandable by your users
- Intuitive, high-performance software
- Screen masks individually adaptable by your user
- Individual reports that can be created quickly and easily by your user

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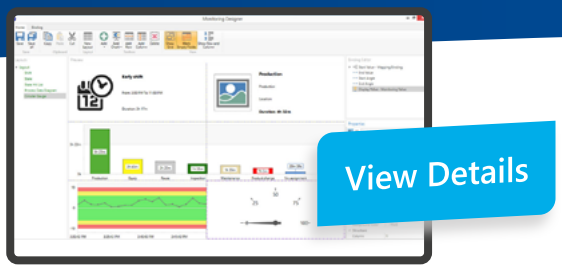


At a Glance: Basic Module

The Future-Proof Basis for Your Individual MES Solution

As the foundation of the FASTEC 4 PRO MES solution, the MES Basic Module provides you with the basic configuration and management functions and is the basis for interfaces to other systems. The integrated View Designer and Report Designer allow you to customize real-time views, evaluations and reports.

Convincing Through Individual Configuration

The FASTEC 4 PRO MES solution can be configured flexibly. It can be perfectly adapted to your production environment. In doing so, the defined FASTEC standard is not left behind. For you, this means the precise mapping of your requirements while at the same time maintaining the update capability of the system.

Modular Design for Fast Expansion

New functions, additional machines or further production areas can be quickly integrated into the already existing FASTEC 4 PRO system. Thanks to the foresighted configuration of the master data in the MES Basic Module, you can easily access them for all licensed MES modules.

If you would like to get an insight to our software, please do not hesitate to contact our sales team.

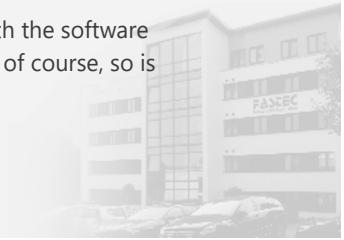
since
1995

Penefit From Our Extensive Project Experience in Digital Production in Various Industries!

Our software solution is industry-independent, modular and individually adaptable. Our software modules and additional functions can be combined flexibly. This allows you to start with the processes for which optimization is needed most! We support you in analysis and planning up to a step-by-step rollout.

In our workshops and training sessions, we familiarize you and your employees with the software and the reports. In addition, detailed online documentation is available to you and, of course, so is our support team.

We are happy to consult you.



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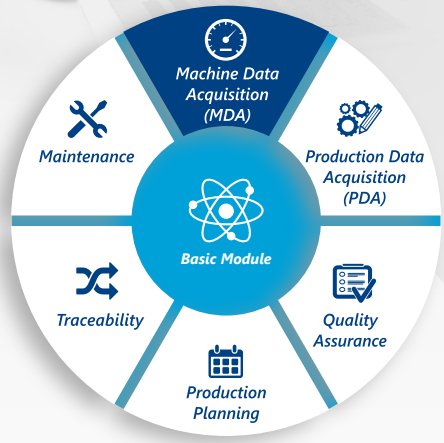
Machine Data Acquisition (MDA) Module

Our module Machine Data Acquisition (MDA) analyzes and visualizes machine data in real time in clear evaluations. Your benefits: weak points in the production process are reliably revealed. You enjoy full transparency in the entire production process.



Machine Data Acquisition Module (MDA)

Standard

- Recording of machine conditions, performance and quality
- Convenient reporting:
  - differentiation of rejects
  - performance analysis
  - MTBF/MTRR
  - setup time report
  - states reports
- Overall equipment effectiveness (OEE)
- Resource Log

Additional Functions

- KPI Configurator
- Process data acquisition
- Process messages
- Data archiving
- Setup rules

The Most Important Functions at a Glance

- Accurate recording of machine running times and downtimes
- Assigning states automatically and/or manually, e.g. production, downtime, fault
- Automatic or manual acquisition on the touch panel, e.g. quantities, scrap quantities
- Detailed evaluations for precise weak-point analysis and identifying optimization potentials

Benefits for Your Corporate Success

- Time savings with simultaneously improved data quality thanks to automatic data acquisition
- Reducing response times to disturbances by online monitoring of the current machine status
- Many evaluations available for problem analysis at the push of a button
- Systematic recording of all downtimes, faults and short-term disturbances reliably uncovers weak points in the production process
- Exact post-calculation regarding the actually required machine running times on the basis of valid data records

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At a Glance: Machine Data Acquisition (MDA)

Goodbye Gut Feeling – Data Become Facts

Due to the increasing degree of automation in production, losses in the area of machine and plant availability are more than ever a critical success factor. A rough estimate and trusting your gut feeling might tell you that a higher effectiveness should be possible. However, only recorded data such as his-torical records and evaluations provide you with reliable results in order to actually verify the presumed losses. Your measures to reduce assumed losses and to significantly increase full utilization of machine capacity can otherwise easily turn into a costly losing game. Create clarity and transparency: Use reliable data for your corporate decision-making.

Cost Reduction & Effectiveness Increase

The Machine Data Acquisition (MDA) module enables you to reduce costs and at the same time increase the effectiveness and quality of your production:

- The automatic recording of machine data considerably reduces your time expenditure compared to manual recording. When recording quantities, linear meters and downtimes, automatic recording is also more accurate and less susceptible to manipulation.
- You can now generate reports and analyses in a matter of seconds. Manual, time-consuming creation of complex MS Excel spreadsheets is a matter of the past..
- Downtimes and faults, including all reasons for downtimes, are recorded consistently and transparently. The comprehensive analysis uncovers weak points in the organizational and technical operations.

Now you can prcisely tackle optimization measures: This marks the beginning of sustainably increasing the degree of utilization and machine availability.

Transparency at the Push of a Button – the Entire Production at a Glance

From your PC workstation, you can find out about the status of individual machines, machine groups or all machines in a hall. Stay informed about what is happening in the selected supervisor area or plant, broken down to individual cost centers. From now on, you can obtain important production figures at the click of a mouse, e.g. performance, availability, quality, OEE results and quantities.

Data Provision in Real-Time – the MDA Module as a Central Data Supplier

The Machine Data Acquisition module provides you with meaningful information from your production in real-time. But the crucial thing is that the module acts like a central data supplier for additional applications. Machine Data Acquisition often provides fundamental data for other modules. This is especially true for Monitoring and Alerts. However, the applications in the areas of Maintenance, Production Planning and Traceability also obtain the decisive input from the MDA data hub.
By combining it with other modules, a complete MES can be smoothly created. Step by step, you optimize the planning, control, monitoring and reporting of your production processes. From assembly workstations to high-tech special machines – the decision is yours.

Binding With Concept – for all Machines, Units and Assembly Workstations

The highly flexible FASTEC interface concept allows you to access machine data via different ways. With I/O modules, digital signals, e.g. cycles or downtimes, are recorded directly at the machine. And without intervention in the plant and machine control system (PLC).

For the acquisition of process data and process messages from the plant and machine control system (PLC), interface modules are available for a variety of common protocols and communication technologies: OPC, Euromap E63, Siemens S5/S7, Profibus.

One Key Figure Provides an Overview: No Touch Time (NTT)

One Key Figure Provides an Overview: No Touch Time (NTT)
The NTT describes the time in which a machine, unit or line produces autonomously.

More information in the **expert paper**

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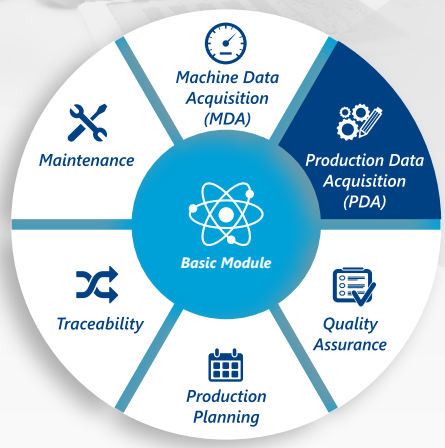
Production Data Acquisition (PDA) Module

Our Production Data Acquisition (PDA) module effectively supports the management and processing of simple to complex production orders. Your benefit: Clear management and planning as well as transparent data and production processes in real time.



Production Data Aquisition Module (PDA)

Standard

- Production order management
  -Routings
  -Bill of material
- Various order types
- Acquisition of quantities and times

Additional Functions

- Staff time recording
- Formula management (DNC/EDS)
- Document display
- ERP bookings
- Automatic order start
- Equipment data acquisition

The Most Important Functions at a Glance

- Clear management and prioritized processing of production orders
- Digital logging in and out of orders at the machine or work centers
- Automatic or manual feedback, e.g. of quantities produced, scrap and counter readings
- Real-time based display of order progress
- Detailed recording and display of various order- and article-related data, e.g. quantities, target values, actual values, remaining quantities and rejects
- Effective support for overlapping production of operations
- Precise projection of the remaining time to the expected end of the order

Benefits for Your Corporate Success

- Paperless registration of orders directly at the machine
- Accelerated processes through online communication
- Transparent production processes through automatically recorded order data
- Fast detection of process disturbances in production
- Immediate visualization of deviations between target and actual values
- Noticeable time savings and avoidance of transmission errors through automatic order feedback to the ERP/PPS system

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At a Glance: Production Data Acquisition (PDA)

More Transparency – More Effective Production

The Production Data Acquisition (PDA) module provides you with exact information about your production processes in real time. This enables you to react quickly in the event of deviations, optimize processes and shorten production times. It is also used for cost control and post calculation.

Optimized Processes – Shortened Production Times

With PDA, all order data is always available at the respective operating location. Machine operators can conveniently register and start jobs directly at the machine. At the same time, other production managers are kept up to date without delay about upcoming, currently running or already completed jobs. The Production Data Acquisition (PDA) module ensures transparency throughout the entire production process.

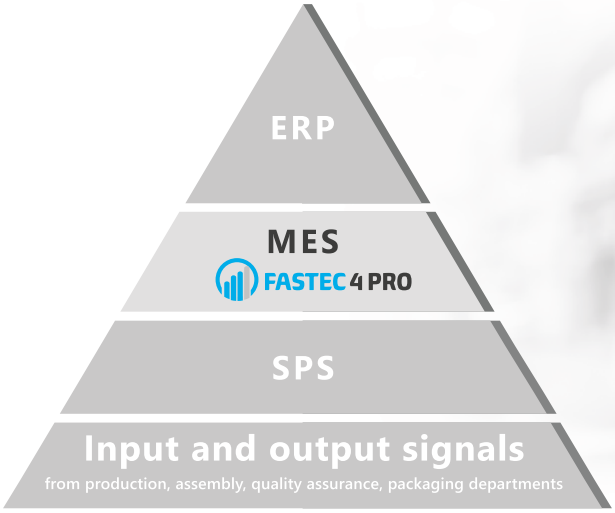
Complex Information Clearly Prepared - Basis for Optimizations

Tables and graphical reports are available on demand at any time. You can view order and article data, scrap values, and comparisons of target and actual data for production or setup data as you wish. You are not limited in your choice: Every user can decide according to his individual goals which data he needs and according to which criteria these should be analyzed.

„When choosing a provider, it was crucial that the system could be adapted to our individual needs –

this is exactly the case with the modular system from FASTEC

Bartlomiej Latowski
Technical Service Manager,
DOM Sicherheitstechnik



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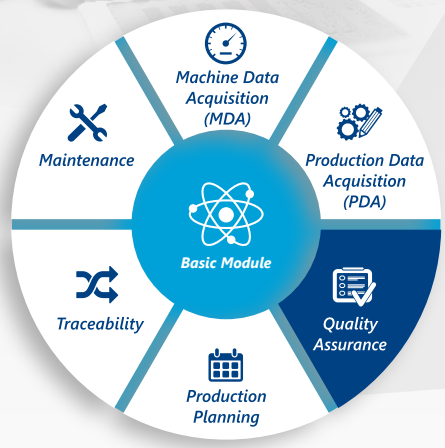
Quality Assurance (QA) Module

Our Quality Assurance (QA) module ensures seamless documentation of test orders – paperless and traceable at any time at the push of a button. Your benefit: Freely configurable inspection characteristics, digital documentation, end-to-end transparency or the reducing of time expenditures.



Quality Assurance Module (QA)

Standard

- Management of test plans
- Live trigger from MDA/PDA
- Automatic creation of test orders
- Digital checklists and forms
- Binding of peripheral devices
- Proactive information management
- Statistical process control (SPC)

The Most Important Functions at a Glance

- Freely configurable inspection type
- Support of in-process inspections and work center inspections
- Flexible configuration of different inspection plans
- Detailed definition of inspection characteristics including specification of the inspection equipment, determination of limit types, limits to be observed and requests for action
- Inspection plan creation and editing including configurable status scheme for status transitions and rights assignment
- Definition of different triggers for the test steps, e.g. time-based or related to the Production order
- Personnel deployment and requirements planning for test orders

Benefits for Your Corporate Success

- Easy integration into FASTEC 4 PRO
- Compatibility with all FASTEC 4 PRO modules and Additional Functions
- Digitization of in-process inspections of your items
- Automated creation of inspection orders based on your order data
- Continuous transparency regarding creation, modifications and release of inspection orders, flexible inspection of your products
- Automated test step creation based on your production data production data, e.g. in the cleaning state of the machine
- Reduction of potential error sources by omission of transmission errors and time savings

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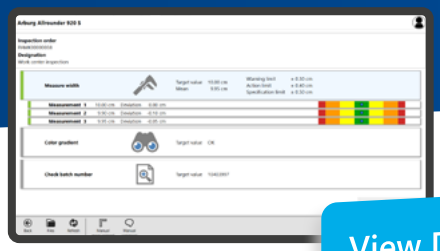


At a glance: Quality Assurance (QA)

Less Paper – More Efficiency on the Shopfloor

The road to a paperless factory is still long in many places – a mix of Excel spreadsheets and Word documents that have to be filled out by hand is still common practice. And this applies to numerous manufacturing companies - regardless of industry and size. In addition, machine operators themselves have to ensure that inspection intervals are adhered to and make decisions about the quality of the goods produced („okay"/"not okay"). Apart from the use of resources and the expenditure of time, the collection of data is accompanied by a constant potential for errors - from the compliance with the inspection intervals to the precise logging and the report.
FASTEC offers an attractive answer to the aforementioned complex issue: paperless, precise and highly configurable are the essential attributes of the newly developed quality module. In combination with the Production Data Acquisition (PDA) module, it opens the door to digital order documentation.
Following a holistic and integrated approach, the new module already offers significantly more functions in its first version than many common SPC tools.

While SPC is primarily concerned with the manual recording of variable and attributive characteristics, the Quality module offers a range of other functions, such as the digitalization of setup checklists.

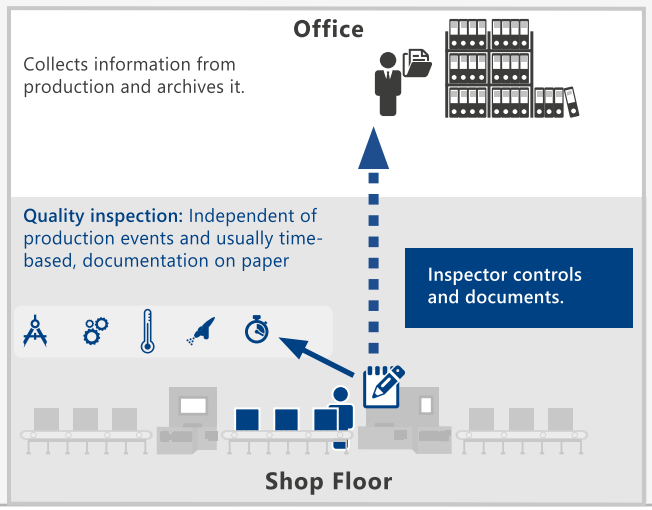
Creating Inspection Plans – Safe, Fast and Convenient

Various characteristics defined in an inspection plan can be inspected according to self-defined intervals.
In addition, process and quality inspections can be partially automated and carried out without machine operators. This is possible, for example, when inspecting Lot-Codes using a stationary scanner. The spectrum of possible inspection point generation leaves nothing to be desired: Automated triggers for digital control, for example of time, operation, quantity and state, ensure consistent quality control and bring even more transparency to production.
In combination with the creation of individual inspection plans for the definition of step sequences, variable, attributive and comparative characteristics, as well as extensive text and number entry options, the module shortens the path to a paperless factory.

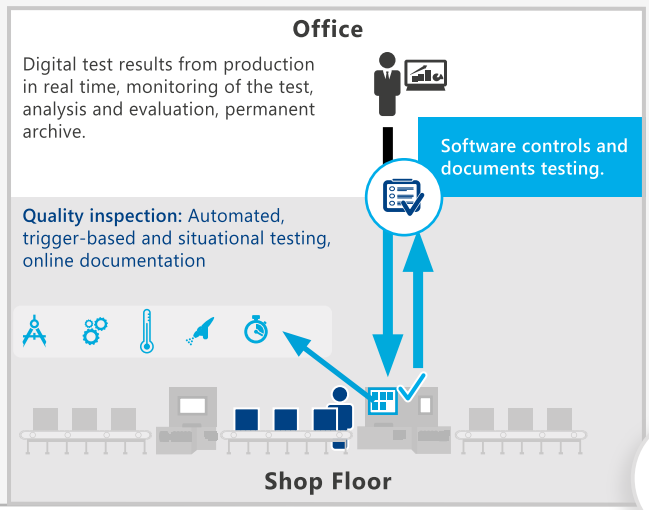
All Documents in One Place – Complete and Within Easy Reach for Audits

Digitalized and automated job documentation not only eliminates manual transmission errors, it also saves time. The machine operator can concentrate on his actual work. In addition, the quality module also proves its advantages in the context of audits: At the push of a button and without long searches in folders, the relevant documentation can be viewed seamlessly.

Handwritten/Inspection in Production



Automated/FASTEC 4 PRO



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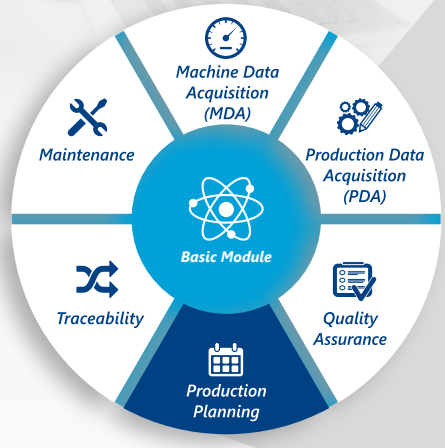
Production Planning (PP) Module

Simple. Real-Time. Planning.

Create transparency, increase adherence to delivery dates, react with flexibility and optimize capacity utilization.



Production Planning Module (PP)

Standard

- Master data management
- Article management
- Routings and bills of materials
- Production variants and versions
- Gantt chart with drag & drop function
- Scenarios and analyses

Additional Functions

- Demand handling
- Digital planning board
- Preplanning
- Planning groups
- Setup rules
- Personnel availability planning
- Equipment availability planning
- Material availability planning
- Semaphores
- Joins
- Semi-automatic planning
- Fully automatic planning

The Most Important Functions at a Glance

- Dynamic calculation of setup time depending on the planned sequence of operations
- Automatic consideration of available capacities, e.g. personnel, material, other equipment
- Adaptive resource visibility: When manually scheduling an operation, only planned resources are displayed
- Scheduling of production order networks
- Consideration of alternative operations or routings including necessary transport and idle times
- Checking for individually definable rule violations, e.g. regarding sequences, deadlines, capacities
- Alternative planning scenarios as a basis for decision-making
- Summary of production orders and batches to campaigns/planning groups

Benefits for Your Corporate Success

- Relief through valid planning
- Digital, uniform production plan - consistent transparency throughout the entire planning process right up to the machine terminal
- Reduction of effort: multi-resource planning taking into account dependencies and available capacities
- Automatic consideration of personnel, equipment and material availabilities
- Increased adherence to schedules
- Planning rather than reacting: detect bottlenecks at an early stage, uncover capacity reserves
- Live data from production enables you to react in real-time to unexpected events

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At a Glance: Production Planning (PP)

With our software solutions for digital production planning provide companies with a a tool that allows them to directly implement (semi-) automated planning.

This tool significantly reduces the workload of planners. As a result, time resources are opened up to further optimize processes and ensure quality. In addition, efficient planning makes it easier to meet delivery deadlines, enables sequence-optimized production, and helps companies avoid waste and reduce costs.

- **Convenient planning – Free of Errors and Effective:**
  Professional planning of plan- and production orders is the most important basis for your cost-optimized production. Only then can you meet delivery deadlines, reduce cycle times, lower production costs and at the same time react flexibly to market changes. Production Planning by FASTEC helps you to cope with these complex requirements.

- **Transparency at All Levels:**
  With a consistent production plan, you achieve end-to-end transparency throughout the entire planning process, all the way to the machine terminal. The current statuses of the orders are clearly summarized and resource bottlenecks are identifiable from day one through Gantt charts.

- **High Flexibility for Fast Responsiveness:**
  Planners must react flexibly to everyday challenges such as order changes, delivery problems or staff shortages and provide a resilient response within the shortest possible time. Thanks to the numerous convenience functions, your planners have the flexibility they need to act individually and reliably - and are thus relieved in their day-to-day decision-making processes. The Production Planning is recalculated and optimized as modifications occur. In this way, waste is avoided and the production process is designed efficiently.

- **Metadata Instead of Monopolistic Knowledge:**
  The efficiency of production planning often suffers due to unequal levels of knowledge or decentrally distributed information. Digital solutions address this problem by allowing knowledge to be stored and made available centrally. Multiple people can work simultaneously on a single plan instead of emailing copies of spreadsheets back and forth or manually merging them on planning boards.

- **No More Obstacles for Optimal Production Planning – Simply Clean Master Data:**
  Efficient planning is based on well-maintained master data – regardless of whether this is to be done manually, semi-automated or automated. You do not have such a clean database yet? No problem! With our Additional Functions for Preplanning, we support you in preparing your Master data for automated detailed planning. You can prepare, sort and group them and thus greatly increase the data quality - and all this without having to extend/adapt the data in the ERP system. You benefit from this directly in your planning projects.

Detailed Information & Best Practices in the „Digital Production Planning“ Whitepaper

https://www.fastec.de/downloads/

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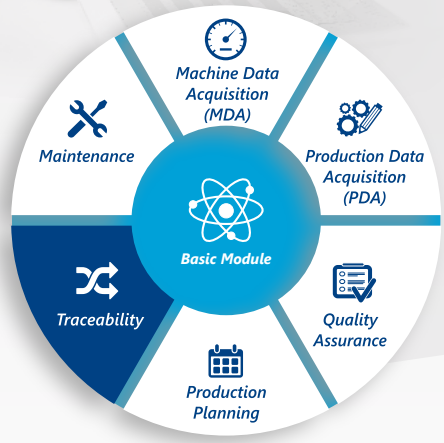
Traceability Module (TRC)

The Traceability (TRC) module provides you with reliable material and process traceability.

Your benefits: Fast and clear identification of faulty products, targeted improvement of suboptimal production processes, and compliance with legal regulations.



Traceability Module (TRC)

Standard

- Acquisition of components used
- Acquisition of process values
- Assembly management
- Process locking
- Serial numbers and batch management
- Label printing
- Reports for traceability

Additional Functions

- Management of production warehouses

The Most Important Functions at a Glance

- Capture, merge and save process and material data material data
- Direct transfer of serial and batch numbers from the machine controls
- Scanning of serial and batch numbers via scanner
- Convenient search and evaluation screens:
  - Product history including forward and backward tracking
  - Process control charts, histograms
  - Process throughput rate (first pass yield)
  - Cycle times

Benefits for Your Corporate Success

- Reliable production through seamless traceability
- Complete overview of the entire value chain
- Complete documentation of the entire production process
- Comprehensive report of the recorded and permanently logged data
- Limitation of defective products in the event of damage
- Minimization of recall costs

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At a Glance: Traceability (TRC)

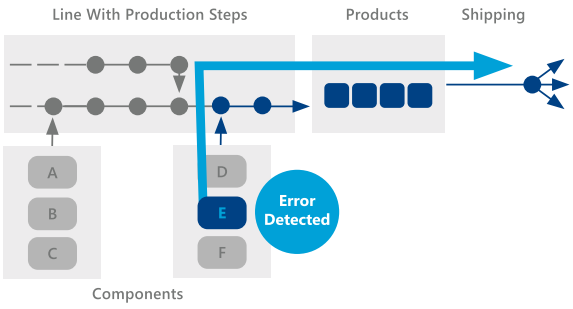
Less Paper – More Efficiency on the Shopfloor

Get a reliable and complete overview of your entire value chain: With the Traceability (TRC) module, you can assess the stability of your production processes at any time thanks to forward/backward tracking, histograms, control charts etc. Comprehensive reports such as first pass yield, general throughput times, processing results, etc. can now be assessed in detail.

All relevant process and material data of the production process are recorded and permanently stored for the respective product identification. For product and part identification, the FASTEC 4 PRO Traceability (TRC) module can apply the serial and batch numbers directly from the machine control system or read the data using a barcode scanner. The number generator creates consecutive serial numbers according to individual number ranges, which the system generates independently and prints as labels, for example.

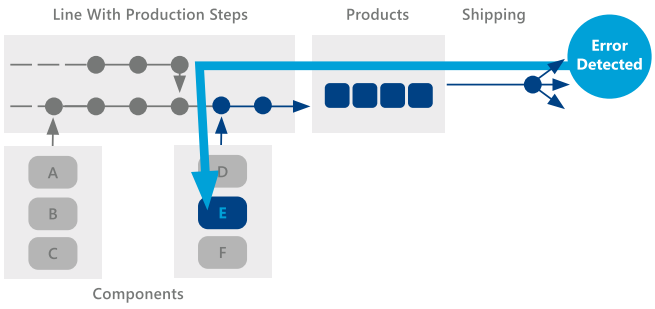
Forward Traceability

Narrow down the affected products in the event of product defects on time – even before shipping



Backward Traceability

In the event of product defects, identify the underlying processes, machines, equipment and batches used



Learn more in our expert paper
„Advantages of Digital Traceability in Highly Regulated Industries Using theFood Industry as an Example“

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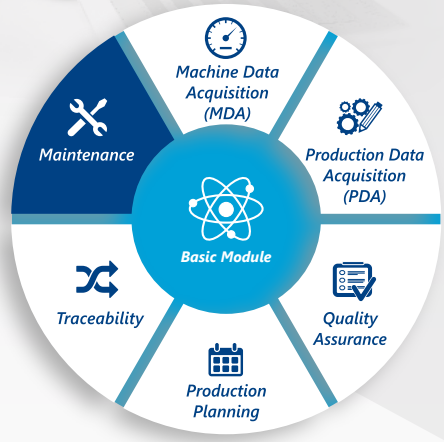
Maintenance Module (M)

Our Maintenance (M) module supports you in all maintenance work - from preventive maintenance to repairs. Your benefits: Efficient, digitalized maintenance processes, regular inspections, reduced susceptibility to faults, optimized maintenance intervals.



Maintenance Module (M)

Standard

- Resource management
- Maintenance plan management
- Live trigger from MDA/PDA
- Automatic creation of maintenance orders
- Digital forms
- Proactive information management
- Personnel deployment and requirements planning
- Alerts
- Request and task management
- MTBF/MTTR
- Autonomous maintenance

The Most Important Functions at a Glance

- Creation of autonomous maintenance plans (types)
- Separate documentation of working times for maintenance activities on the machine (manual or RFID)
- Involvement of machine operators through maintenance requests
- Various triggers, e.g. calendar intervals, states, up time or number of pieces
- Predictive maintenance
- Provision of supporting documents, digital forms for your customer-specific damage reports and checklists, supple mentary comments and error information
- Documentation of activities performed and bill of materials required

Benefits for Your Corporate Success

- Significant time and cost savings
- Relief of maintenance personnel
- Higher identification of the machine operator through transfer of responsibility
- Quick rectification of minor faults by the machine operator
- Uniform order management and regulated Maintenance requests
- Optimized planning through assignment of urgencies
- Fast response time through individual alerts

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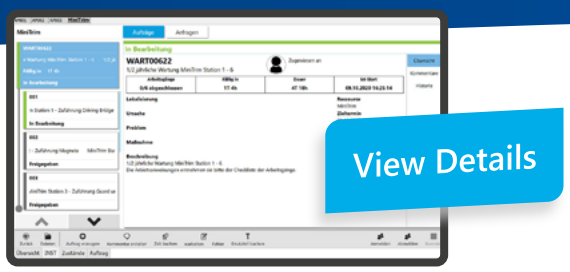


At a Glance: Maintenance (M)

More Responsibility for Machine Operators – Smoother Production

Within the scope of maintenance, minor measures such as cleaning, oiling or other activities on the machine are transferred directly to your machine operator. This targeted transfer of responsibility saves you time and money. Your production process becomes faster because you don't have to involve a maintenance technician for every small maintenance task. You can configure autonomous maintenance quickly, including assurance of end-to-end documentation.

Display of Instructions and Guides – Directly on the Machine and Always Up to Date

Benefit from the advantages of the FASTEC 4 PRO Additional Function Document Display and link a wide range of documents and information as required. These are made available to your machine operators at the production terminal. A simple request at the terminal enables the maintenance staff to receive information quickly.

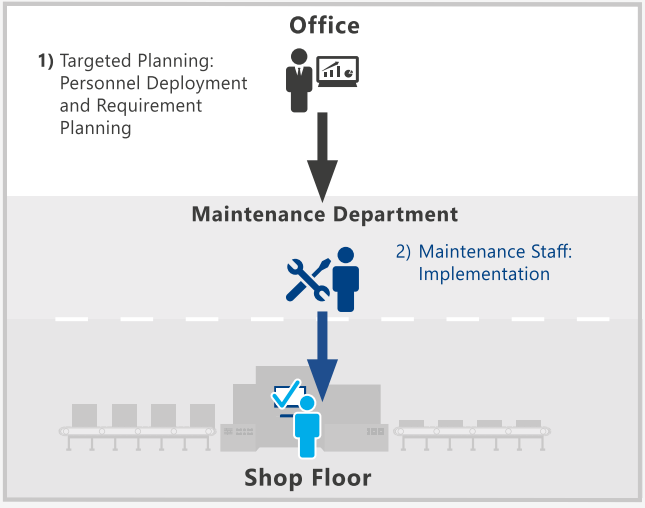
Requests From Machine Operators – Module of Total Productive Maintenance.

Maintenance requests are integrated into the module. To enable you to achieve continuous improvements in your machinery, your machine operators have the option of entering suggestions for improvement and comments in the system at any time. You and your TPM manager thus have a valid basis for checking the implementation of the proposed measure

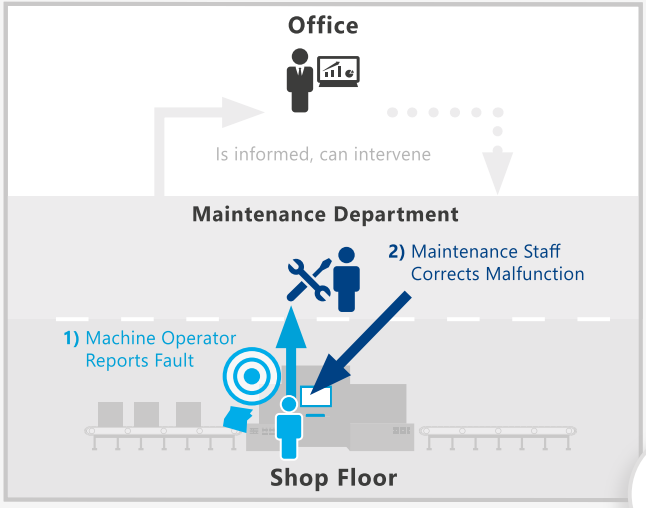
Avoid Downtimes as Good as Possible – Preventive Maintenance Planning

Combine the Maintenance module with the FASTEC 4 PRO Additional Function Autonomous Maintenance. Be actively supported in the execution of reactive maintenance measures as well as in the control of preventive and autonomous maintenance measures. This way, you significantly reduce defects and failures. While the Additional Function Autonomous Maintenance alerts production staff to minor maintenance or cleaning measures, you can create concrete maintenance and inspection orders in Planned Maintenance, e.g. at time or condition-based intervals.

Proactive: **Planned Maintenance Measure**



Reactive: **Unplanned Maintenance Measure**



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Your Benefits in Production Control

Your entire company will benefit from FASTEC 4 PRO at all levels. From the production manager to the machine operators, the maintenance staff and the controlling to the management.

Production Manager

- Minimized idle times, reduction of downtimes
- Fast, targeted reaction to malfunctions or performance losses
- Identification of weak points
- Improved order and personnel planning
- Higher throughput due to shorter cycle times
- Paperless production
- Maintenance integrated into production processes

CONCLUSION:
Transparent production minimizes your waste of resources.

Machine Operator

- Continuous target/actual comparison provides current key figures on job progress
- Simple recording of all machine and process faults
- Digital provision of order-related documents and monitoring of important process data
- Order bookings directly at the machine
- Requesting maintenance in the event of majo malfunctions

CONCLUSION:
Digital monitoring of the production process guarantees efficient work on your machines.

Maintenance Staff

- Preventive maintenance is efficiently integrated
- Maintenance planning takes machine occupancy into account
- Electronic maintenance equipment is provided on site
- Digital documentation of all maintenance performed including spare parts consumption for all equipment
- Comprehensive reports for analysis of maintenance measures

CONCLUSION:
Preventive maintenance and complete documentation ensure that your machines are well taken care of.

Managing Director/Controller

- Solid, meaningful database to support strategic decisions strategic decisions
- Continuous performance measurement enables up-to-date key figures
- Productivity potentials are uncovered
- Savings or margin increase through Production cost reduction
- Optimal CIP analysis tool
- ROI in less than 12 months

CONCLUSION:
With digitally generated, meaningful reports, you make the right decisions for the success of your company.

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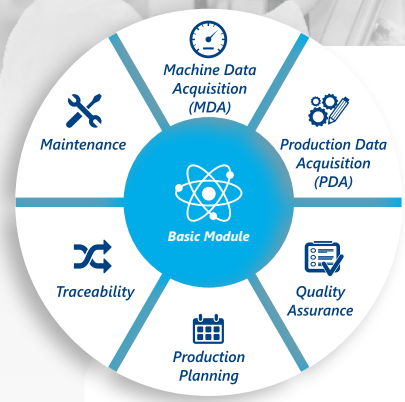
FASTEC 4 PRO Additional Functions

With our Additional Functions you can develop your digital manufacturing step-by-step, tailored and individual. What goals do you have for your production? We are happy to consult you.



Diverse Requirements – One Solution:

The FASTEC 4 PRO modules are perfectly complemented by several Additional Functions. Based on the MES Basic Module, all FASTEC 4 PRO modules can be individually combined with each other according to your requirements and flexibly supplemented by our Additional Functions.

In doing so, all functions access a common and uniform database. This means that you always have consistent data – there are no undesired overlaps between the modules and Additional Functions and no duplicate data storage.

The modular structure allows a step-by-step and demand-oriented implementation of the software modules up to an all-embracing digitalization of your complete production at one or more locations.

You only buy and pay for what you really need.

Our Additional Functions – for a Step-by-Step, Tailor-Made and Individual Development of Your Digital Production:

Alerting
Never miss self-defined events again

Autonomous Maintenance
Relief of the Maintenance Team

BI Connector
Our interface to common BI tools

DNC + Configuration Data
Easy data transfer to the machine, accelerated production steps

Document Display
Production documents order-related directly at the terminal

Energy Monitoring
Capture and visualize production-related energy data

Mobile Client
View production events on the go – reliable and freely configurable

Monitoring
States, production key figures, alarm indications – everything in sight

Personnel Time Recording
Paperless, complete and transparent documentation

OPC UA-Schnittstelle
Platform-independent data exchange for industrial communication

Production Logistics
Provide material appropriately, reduce error rates

Process Data Acquisition
View and report on process data from machines and plants in real-time

Process Messages
In-depth analyses: read out data directly from the machine control system

Preplanning
Excellent data quality: Fast, simple, configurable, without adjustments in ERP

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FASTEC 4 PRO Additional Function Alerting

Respond immediately when needed: Get automated alerts for self-defined events – via email, VoIP call, SMS, pop-up message or app.

The Most Important Functions at a Glance

- Simple and individual configuration of important alert events, e.g. technical faults, material shortage, excessive scrap production, exceeding or falling below specified values
- Multi-level escalation management
- Definition of notification chains
- Free selection from different automatic notification forms such as call, e-mail, SMS, push message, VoIP call, Office Client popup as well as the FASTEC 4 PRO Mobile Client App

Benefits for Your Corporate Success

- Permanent real-time monitoring of production
- Faster reaction time due to immediate information about deviations, malfunctions, interruptions as well as delays in the production process
- Reliable 24/7 monitoring of production even during ghost shifts and weekends
- Minimized downtime for higher productivity
- Reduced effort due to reactive maintenance operations during late and night shifts

Anytime, Anywhere – a Reliable View Into Production

Alerts help you to quickly detect deviations in the production process. If something in production does not go according to plan, the FASTEC 4 PRO Additional Function Alerting informs you immediately. Especially when you are not at the work centers, this brings many advantages. The alerting options are therefore wide-ranging. They work both on your PC and in noisy production environments. On the go, the alerts reliably find their way to your smartphone or tablet using the additional app FASTEC 4 PRO Mobile Client or via SMS.

Detect Faults Quickly – Intervene Without Delay

Alerts can be triggered by various events: The change to certain, usually undesirable states, timeouts, limit violations, loss of performance, reaching set counter values, the imminent end of a job, lack of material, etc. These reasons are familiar to you and the list can be easily extended. Therefore, it is important to record as many Alert sources as possible in a structured way. In FASTEC 4 PRO, this can be any configured resource. In so-called alarm chains, you configure the events that trigger an alarm. In doing so, you can define delays and waiting times. This allows you to implement a multi-level escalation management, which informs further recipients one after the other in the case of events that last longer.

Behind Every Alert There Is a Clever Idea – and a Simple Configuration

In the configuration, you can easily define which machines are to be monitored and how, and which of your employees are to be informed when and in which order via which medium. If, for example, there is a malfunction on a machine for longer than three minutes, or if the set target cycle of an operation is conspicuously often undershot, the system automatically alerts the previously defined persons.
You can also monitor KPIs such as OEE, NEE, performance, etc. and, in the event of critical deviations, immediately alert the responsible employees automatically. In this way, you can ensure that appropriate measures are initiated without delay in order to take effective countermeasures.

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FASTEC 4 PRO Additional Function Autonomous Maintenance (TPM)

The MES Additional Function Autonomous Maintenance transfers responsibility for minor measures directly to the machine operator. The maintenance team is relieved.

The Most Important Functions at a Glance

- Creation of autonomous maintenance plans
- Various triggers, e.g. according to production output or calendar intervals
- Provision of supporting documents
- Documentation of activities performed
- Documentation of required bill of materials
- Supplementary notes and defect notifications
- Measures management and suggestion system for further optimizations

Benefits for Your Corporate Success

- Higher identification of the machine operator through transfer of responsibility
- Quick rectification of minor faults by the machine operator
- Significant time and cost savings
- Reduced workload for maintenance personnel
- Uniform management of measures and regulated processes for defect reports and maintenance requests

More Responsibility for the Machine Operator – Smoother Production

As part of Autonomous Maintenance, minor measures such as cleaning, oiling or other activities on the machine are transferred directly to the machine operator. This targeted transfer of responsibility saves you time and money. Your production process becomes faster because you relieve the maintenance personnel. You can configure autonomous maintenance quickly, including ensuring end-to-end documentation.

Display of Instructions and Guides – Directly on the Machine and Always Up to Date

Also take advantage of the FASTEC 4 PRO Additional Function Document Display and link a wide variety of documents and information as needed. These are made available to your machine operators at the production terminal. A reading confirmation for release supports the careful execution of the work.

Suggestions for Improvement – Building Block of Total Productive Maintenance

A suggestion system is integrated into the Additional Function Autonomous Maintenance. In order to be able to achieve continuous improvements in your machinery, your machine operators have the opportunity to enter suggestions for improvement and comments in the system at any time. This provides you and your TPM manager with a valid basis for checking the implementation of the proposed measures.

Avoid Downtimes in the Best Possible Way – Preventive Maintenance Planning

Combine the Additional Function Autonomous Maintenance with the FASTEC 4 PRO module Maintenance. Let us actively support you in the implementation of reactive as well as in the control of preventive and autonomous maintenance measures. This way, you significantly reduce defects and failures. While the Additional Function Autonomous Maintenance notifies production staff of minor maintenance or cleaning measures, you can create concrete maintenance and inspection orders in Planned Maintenance, e.g. at time or condition-based intervals.

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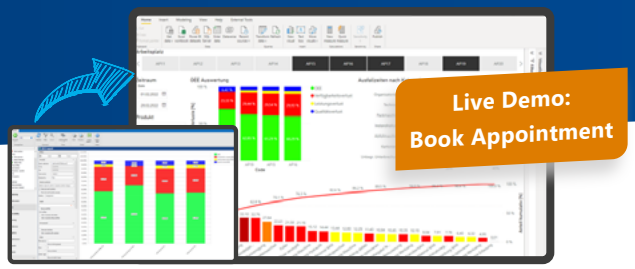


FASTEC 4 PRO

FASTEC 4 PRO Additional Function BI-Connector

Merge, visualize and analyze data: The BI-Connector provides a stable interface for making machine data acquired with FASTEC 4 PRO available as a data source in common BI tools.

The Most Important Functions at a Glance

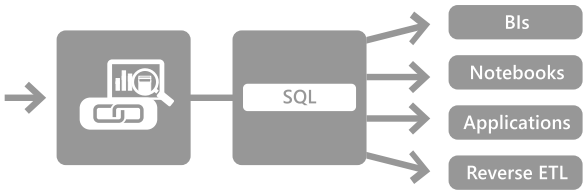
- Stable interface to popular cloud-based BI tools such as Microsoft Power BI, QlikView, Databricks, etc.
- Data from different data sources, for example real-time data from FASTEC 4 PRO, can be correlated in the BI tool with data from third-party systems such as SAP and jointly evaluated.
- Making cross-plant processes measurable and thus comparable
- Import of standard calculations from FASTEC 4 PRO for KPIs such as OEE, downtimes, defect rates, etc. (Measures)

Benefits for Your Corporate Success

- Real-time data collection, aggregation and analysis
- Reports on KPIs that enable optimization at production level and improve key business functions
- Transparent visualization of data makes results, processes or development trends intuitively (more) understandable.
- Make interrelationships between different areas of the company more transparent and compare processes at different locations.

Advantages of an Evaluation Model

- Decoupling of FASTEC 4 PRO and the external system: A structural adaptation of the internal data model of FASTEC 4 PRO is possible without having to change the external access.
- The data is provided in a pattern suitable for reports (Star or Snowflake) with dimensions for filtering and grouping as well as facts for aggregation.
- Sample queries for calculating various KPIs are available in DAX and SQL.



Typical application scenarios

- **Binding FASTEC 4 PRO to various BI platforms**
  - Open up existing data sources and enable all employees to access them
  - Merge and link production and other company data
- **Create higher-level reports and key figures**
  - Comparison of processes at different locations
  - Comparison of ERP master data (calculations) with actual production costs
- **Access of local application to production data**
  - Information on order progress

Implementation

- Provision of the views and access in the FASTEC 4 PRO database.
- Provision of documentation and sample queries
- Online instruction
  - Setting up access to database
  - Import views, build model
  - Create and test sample queries
  - Clarify questions
- Online support as needed
  - Develop queries, diagnose errors
  - Clarify questions

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FASTEC 4 PRO Additional Function DNC and Configuration Data

We speak the language of the machines. This Additional Function enables simple data transfer to the machine, physical data carriers are replaced and production steps are accelerated.

The Most Important Functions at a Glance

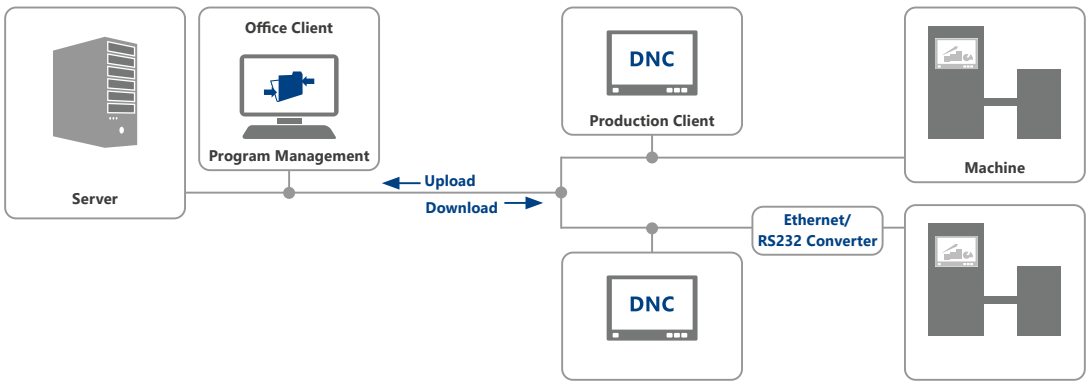
- Centralized storage and structured administration of all program files and versions
- Comprehensive search function according to various criteria, e.g. machine, article, program number
- Supported versioning of data records
- Supported uploads and downloads of data records
- Display machine status and transfer progress
- Machine connection via the Ethernet network
- Connection of older machines with serial interfaces (RS232/485) via interface converters

Benefits for Your Corporate Success

- Orderly storage
- Central administration of all program files
- Permanent availability of current versions
- Prevent accidental use of old versions
- Simple and standardized operation

Direct Data Transmission to the Machine – No Physical Data Carriers Needed

Modern machines running in your production already have highly sophisticated controls that execute production orders using NC programs, setting data records, recipes or configuration data records.
Since the corresponding files are often developed in your design or work preparation department, a data transfer from the design offices to the machine is necessary. In some cases, physical carriers are still used to transmit this data. However, thanks to the direct machine connection this complicated step has become obsolete. The FASTEC 4 PRO additional function DNC and Configuration Data takes over and digitalizes this step.
Since you can do without physical data records, you avoid using outdated versions. The latest version is always available. In this way you sustainably reduce the number of errors and make work easier for your machine operators.



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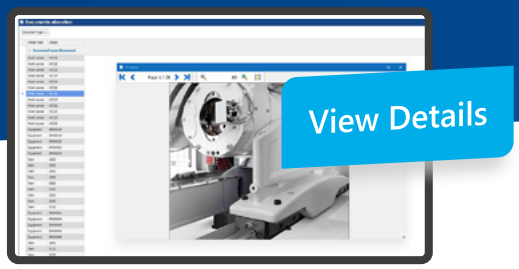

FASTEC 4 PRO

FASTEC 4 PRO Additional Function Document Display

Always stay on top of the latest information: All required production documents immediately at hand - order-related and directly at the terminal.

The Most Important Functions at a Glance

- Paperless display of production-related documents directly at the production terminal
- Display of working and testing instructions, photos, drawings etc. with reference to the order and working operation
- Configurable access level: Everything, only current order/article, only current working operation
- Viewer for displaying various formats including web links
- Predictive display of the next working step/order
- Comfortable operation by touch, including zoom function

Benefits for Your Corporate Success

- Ensuring smooth processes by directing employees during
  - complex set-up and assembly processes
  - extensive test procedures
  - manufacturing products with a high number of variations
  - autonomous maintenance orders
- Access up-to-date information at the workplace at all times – no time wasted searching for misplaced papers or errors due to outdated or illegible drawings
- Increased flexibility thanks to faster provision of information
- Compliance with quality standards through reduced error rates
- New employee training without additional efforts

Information Where It Belongs – Transmitted Directly to the Workplace

With the additional function Document Display, you can manage all relevant information for production, assembly or maintenance in a paperless manner, such as working and testing instructions, photos and drawings. This reduces time loss by picking up or searching for documents as well as the probability of reading errors and ultimately, scrap resulting from production errors.

Your production employees receive all information transmitted directly to the workplace. This particularly pays off in context of activities requiring information to a great extent as well as complex working steps. New employees can be trained quickly,comprehensively and safely thanks to the FASTEC 4 PRO additional function Document Display.

Effective Support – for a Smooth Process

Make use of the advantages offered by the Document Display and get automated support for complex set-up and assembly processes, the production of small batches, productions with a high number of varieties as well as for extensive testing processes.

Display of All Common Image Formats – Optionally Related to Workplace or Working Operation

All common types of image documents such as JPG, BMP, TIF and PNG are supported. Furthermore, a PDF viewer is integrated, which allows you to view PDF documents without installing additional software. You can save a wide variety of documents – be it photos, technical drawings, instructions,etc. You can store the documents workplace-related as well as related to the working operation.

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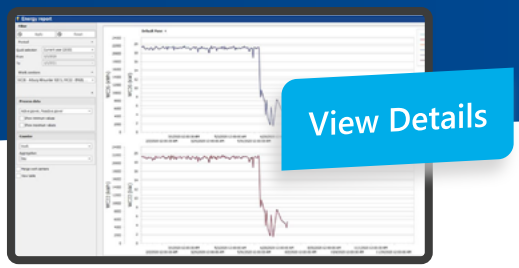

FASTEC 4 PRO

FASTEC 4 PRO Additional Function Energy Monitoring

Transparency and control of energy consumption: This Additional Function records and visualizes production-related energy data. Identify process-related load peaks and energy guzzlers!

The Most Important Functions at a Glance

- Comprehensive energy evaluation per article, order or over a given period of time
- Storage, acquisition, visualization and monitoring of energy data
- Display of apparent or reactive and active power, voltages, currents or flow rates
- Alerting when defined values are exceeded

Benefits for Your Corporate Success

- Permanent control of energy consumption
- Fast recognition of increased energy consumption, e.g. due to defects
- Detect process-related peak loads
- Identify “energy guzzlers”
- Continuous transparency in energy consumption
- Recognize saving potentials
- Post calculation of production orders including the energy needs
- Take into account energy aspects in investment decisions

Identify Saving Potentials – Reduce Energy Costs

It is very likely that production is the division of your company with the highest energy consumption. Accordingly, it is of paramount importance to immediately identify possible savings. The FASTEC 4 PRO additional function Energy Monitoring supports you with the acquisition, visualization and evaluation of energy data. With the newly gained transparency about energy consumption you can profit from deriving reliable saving potentials. In this way you not only save valuable resources, you are also able to include the energy consumption in detail in your post calculation of the production orders.

Data Acquisition – Multiple Options, One Goall

You have several options to collect energy data. Special I/O plug-in modules can quickly and easily be connected to existing I/O modules for machine data acquisition. What is more, you are able to connect with an interface to a widely used multi-function measuring device SENTRON PAC by the company Siemens.

Alternatively, you can rely on S0 interfaces through which your data is consistently recorded and then clearly assigned to the respective consumers. These can be machines, machine units, production areas or even your entire factory.

Extended Benefits – Data for Environmental Audits

You increase the benefits of the FASTEC 4 PRO additional function Energy Monitoring additionally if you decide to combine it with other MES modules. An attractive example is the MES module Production Data Acquisition (PDA), with which you can also generate order-related evaluations. For environmental audits, you receive order and article-related CO2 balances.

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FASTEC 4 PRO Additional Function Mobile Client

Our App is the ideal supplement to the Additional Function Alert. You receive information about all production events anytime and anywhere - reliable, complete, freely configurable.

The Most Important Functions at a Glance

- Consistent mobile monitoring of important data and events, e.g. statuses, orders, produced or processed quantities
- Easy and individual configuration of important alarm events, e.g. technical faults, shortage of materials, excessive scrap production, exceeding or falling below the default values
- Detailed push notification including information on source, time, duration of the status as well as an optional free text
- Multi-level escalation management
- Freely configurable definition of message chains
- Complete logging and acknowledgement of all aler messages

Benefits for Your Corporate Success

- The entire production at a glance – with smartphone and tablet
- Immediate response to problems, disturbances, interruptions and delays in the production process
- Continuous monitoring of production even in unmanned ghost shifts and on weekends
- Reduction of downtimes and therefore higher productivity

Smartphone or Tablet – Mobile Client App for Android and iOS

The Mobile Client app is the ideal extension to your Alerting module. Based on FASTEC 4 PRO, real-time data for the mobile monitoring is obtained and subsequently visualized inyour smartphone or tablet app. This means up-to-date information – for example about the condition, duration of the state, order, processed quantities, total quantities, scrap parts or good parts – which is always with you.

Clear Rules for Rapid Intervention – User Roles and Escalation Chains

In FASTEC 4 PRO you configure the display of the app the way you want it to be displayed to the different groups of users. In this way, you can avoid that machine operators from hall 1 is informed about downtimes in hall 3, for example. The configuration of the Mobile Client gives you extensive options for mapping the special requirements of the user, be it push messages for your production manager or non-time-critical information for your management. In order to process the alarm messages, FASTEC 4 PRO simultaneously creates a log for the time at which the message was sent and an acknowledgement by the recipient. If the recipient does not respond to the alarm message within a certain period of time, the escalation management in FASTEC 4 PRO alerts other users according to your specifications. This guarantees that the reason for the alarm can be eliminated as quickly as possible.

Test App in Demo Mode!

To the App Store

https://apps.apple.com/de/app/fastec-4-pro-mobile-client/id972617776

To Google Play

https://play.google.com/store/apps/details?id=de.fastec.mobileclient&hl=de

Mobile Client – Individual Configuration and Evaluation!

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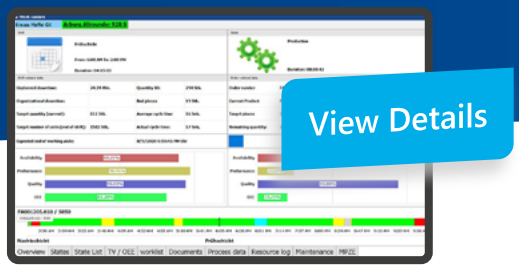

FASTEC 4 PRO Additional Function Monitoring

The states of individual machines, current production figures and alarms - everything at a glance, comprehensively and, of course, in real-time.

The Most Important Functions at a Glance

- Graphical machine park with real-time data
- Tabular and graphical views
- Slide views with individually adjustable alternating views
- Tickers as information triggers for employees
- Easy configuration of individual views for each area of application

Benefits for Your Corporate Success

- Overview of the entire production in real time
- Precise information enables immediate reaction to events and faults
- Visually appealing and clearly prepared data form a valid basis for decision-making
- Simple, fast and secure configuration of views by the respective user

Clear and Consistent Information – On All Devices

With the additional function Monitoring, you and your team can easily display the required information on different devices – on the production terminal, special monitors or on large screens. Embedded in the shop floor layout, you can keep an eye on the machine states, have valid, visualized order-related process data at hand or communicate important information, e.g. to the executive management or plant management.

We Know What It Takes – Tailored to Target Groups

You can design the display on the selected screens individually and depending on the location. The additional function Monitoring provides you with numerous standard screen masks already included in the standard scope of supply. With the help of the additional function View Designer, you can create further special displays, e.g. the summary of production performance of the past eight hours for your management meeting or current status and error messages for your quality assurance.

As Diverse as the Information Itself – a Wide Range of Visualization Options

Ideally, information should not be restricted. It has to be available in real time and enable you to find out promptly what is relevant to each situation and to integrate additional information. With the additional function Monitoring, you can take advantage of those possibilities. Order-related information, current production data as well as individually designed reports are only a part of the display options. Additionally, you can visualize current KPIs graphically or in tabular form in a periodically alternating sequence. Other elements, such as web pages and news tickers, can also be easily displayed using the additional monitoring function, thus increasing transparency.

Towards Lean Production and Industry 4.0 – Thanks to Monitoring

Defined principles of lean production include bringing together competencies and responsibilities, working in networks and synchronizing processes. This creates transparency. The transparency in turn results in a continuous improvement process. In order to participate in this process, the integration of all employees involved in production with the help of production- relevant information is essential. How the additional function Monitoring can successfully be implemented on the way to Industry 4.0 has been demonstrated by Diehls Controls in Wangen, Germany. The company was elected for the Factory of the Year Award in 2015.

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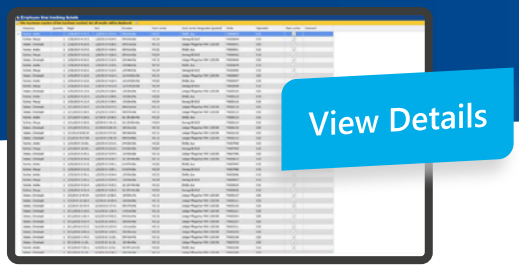

FASTEC 4 PROAdditional Function Personnel Time Recording

The Additional Function Personnel Time Recording precisely documents working and break times, paperless and transparent. Post-calculations can thus also be related to personnel expenses.

The Most Important Functions at a Glance

- Easy and clear personnel administration thanks to the possibility to import personnel master data
- Anonymous or personalized registration, e.g. by RFID, barcode or keyboard
- Convenient support of multiple machine operation
- Transparent management of several employees at one machine
- Time-saving, precise recording of working times and activities by means of touch entry
- Error-free transfer of the recorded data to external systems

Benefits for Your Corporate Success

- Transparent post calculation taking into consideration individual personnel costs
- Precise documentation in order to record individual working times
- Optimized work processes and personnel costs thanks to targeted deployment of personnel

Record Personnel Times Precisely – Also for Multiple Machine Operation

You can use the additional function Personnel Time Recording to record the working and break times of your production employees. They are assigned to individual working operations or activities. For this purpose, your employees log on or off either at one or at several workstations in parallel. In this way, you can also perfectly log multiple machine operations. There are various options available for the registration and deregistration process, e.g. manually or by RFDI.

One Workplace, Several Employees – Acquisition With No Ifs, Ands or Buts

The system also supports the registration of several employees at one workstation – a constellation which is standard practice on the lines, for example. A distinction can be drawn between main employees and “other” employees. You can report relevant activities directly on the production terminal with the help of a selection screen which is also a touch screen.

For Immediate Transparency – View Personnel Expenses and Link Them to Orders

Time bookings are generated by the additional function Personnel Time Recording and are then linked to orders, working operations and articles. This means you can also incorporate the actual personnel-related expenses in your post calculation.

The Logical Step – Expansion With the Additional Function Personnel Planning

Combined with the FASTEC 4 PRO additional function Personnel Planning, you can implement the results of personnel time recording directly in your personnel planning.
This enables you to plan even more effectively and noticeably reduce expenses.

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FASTEC 4 PROAdditional Function OPC UA-Interface

Communicate easily with third-party systems: OPC UA (Open Platform Communications Unified Architecture) is the platform-independent data exchange standard for industrial communication.

The Most Important Functions at a Glance

- Integrated OPC UA server as of version 3.4.4
- Platform-independent data exchange standard for industrial communication (machine-to-machine or PC-to-machine communication)
- Horizontal and vertical communication up to the cloud
- Flexible two-way exchange of data and key figures
- The data points we calculate are provided by the OPC UA server as of version 3.4.4: VoIP Call, Office Client Popup as well as the FASTEC 4 PRO Mobile Client App.

Benefits for Your Corporate Success

- Standardized interface/wide availability
- Secured communication without additional hardware directly in the protocol
- Simple and unambiguous interpretation of data
- Simple Ethernet-based networking
- Internationally standardized interfaces for easy machine integration (Companion Specifications)
- Very good performance due to fast communication
- Harmonized IT infrastructure for complete transparency at all levels
- Compliance with high security standards locally and in the cloud

Uniform Standard for Data and Information Exchange

Machines must offer their data and services in a machine-readable form if they are to talk to each other and if engineering by humans is also to be as simple as possible. The open interface standard OPC UA is independent of the manufacturer or system supplier of the application, the operating system or the programming language. The OPCUA- server provides the data from manufacturer-specific interfaces. The data points we calculate are provided by the OPC UA server as of version 3.4.4.

Exchange possibilities:

With the FASTEC 4 PRO MES solution, we rely not only on one-way data transfer from the machine to IT but instead on two-way communication. This means that data and information can also be returned to controllers on the store floor and any key figures such as OEE, NTT or MTBF can be displayed on HMIs (Human Machine Interfaces) directly on the machine. Our customers can flexibly access the data management of the control system from any device. This simplifies the connection of various machines to the plant structure. The aim is not to apply the machine control system, but to provide comprehensive data acquisition via the MDA and PDA modules and subsequent transfer of the data acquired in real-time to various applications in compliance with the OPC communication standard. And this along the entire value chain. Possible areas of application for using this data are many and varied. For example, users can evaluate real-time data from the store floor via Microsoft Power BI using our Additional Function BI-Connector.

Standardized Communication

The basic requirement for use is a network based on the Internet Protocol (IP). In addition, machines or systems with a programmable logic controller (PLC) are required. The communication is based on the client/server principle. With an installed OPC client a connection to an OPC server can be established

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FASTEC 4 PROAdditional Function Production Logistics

Transparent and controlled material movements: By controlling the selection of components, the error rate in manufacturing and assembly processes can be reduced.

The Most Important Functions at a Glance

- Management of the production warehouse
- Management of loading equipment
- Control of picking
- Printing of transport labels
- Control of putaway and packing processes
- MDA-based reconciliation under posting of stock changes
- Automatic generation of transport orders

Benefits for Your Corporate Success

- Always up-to-date inventory data
- Transparent and controlled material movements
- Avoidance of downtimes due to material shortage
- Automated replenishment control
- Flexibility and minimized search times during picking through Pick-by-Light
- Avoidance of component mix-ups through Pick-by-Light support in assembly

Fast and Accurate Material Supply – Continuously and Independently

The core task of the Additional Function Production Logistics is the management of picking and small parts warehouses in production. This is often done in conjunction with a pick-by-light function. The system continuously monitors your actual material stocks and automatically requests replenishment when necessary. The Additional Function Production Logistics supports material provisioning in your production process, but without being a fully comprehensive warehouse management system.

Wide Range of Applications – Capture Batches and Manage Containers

When you enter batches of delivered materials in your goods receipt, you can process them in a targeted manner. You can block or release the posted batches and thus transfer them to a production warehouse. You can also transfer warehouse stocks to an existing warehouse management system via an interface. The loading equipment management supports your logistician in the transfer posting of pallets. For packaging, the system supports you with container management. The printing of package labels is also easily possible.

Optimize Material Stock – Prevent Downtimes Due to Missing Material

By automatically requesting replenishments, you significantly accelerate material provisioning. You also optimize your storage capacities in the picking warehouse. For example, if you fall below a defined minimum stock level, the system automatically requests the necessary materials from replenishment or reserve stores. In your production area, you can continuously monitor and ensure material stock in the same way. In conjunction with the MES module Machine Data Acquisition (MDA), for example, the assembled items are counted at the assembly workstation. As soon as a specified quantity of material has been assembled according to the Bill of Materials or a transport lot has been produced, a transfer order is automatically generated for the material warehouse.

Downtimes due to missing material or delays caused by lack of space can thus be reduced to almost zero. Of course, you also have the option of recording and permanently storing delivered quantities by batch and supplied customer in the goods issue area. This provides you with consistently transparent processes in the internal material flow and ideally complements your warehouse management system.

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FASTEC 4 PRO Additional Function Process Data Acquisition

With the Additional Function Process Data Acquisition (PDE) process data of machines and plants are read out, transparently reported and permanently saved in a database. In real-time!

The Most Important Functions at a Glance

- Acquisition, logging and storing of configured process values
- Freely configurable time trigger for all process values
- Monitoring tolerance and intervention limits and triggering off messages and alarms
- Displaying OEE states in the overall display
- Immediate availability of graphical and tabular evaluations at the push of a button
- Printing and data export to Excel

Benefits for Your Corporate Success

- Monitoring the configured process values permanently in search of deviations
- Permanently storing all process data in a database
- Convenient evaluations including time filters, shift filters and article filters even for longer periods of time in graphical and tabular form
- Reliable documentation of processes in the form of protocols, log books and diagrams

Identifying Process Defects – Avoiding Production Errors

Process Data Acquisition makes production processes comprehensible. This effectively supports you in identifying production errors and process defects. You can detect deviations right from the start and thus, among other things, you can avoid the production of scrap parts before they even occur. With the additional function Process Data Acquisition, you can record process values – such as temperature and pressure – in relation to time. The permanent storage in a database is the basis for extensive analysis options.
In combination with our module Production Data Acquisition (PDA), you can also create article and order references.

Rapid Reaction – Thanks to Real Time

With the additional function Process Data Acquisition you can monitor and document the entire production process consistently and in real time on the basis of essential influencing variables. Process data such as analog measurement data (temperatures, pressures, etc.) are read out directly from the machine control. However, they can also be acquired via sensors at analog inputs, e.g. by means of an I/O module. The acquisition of the measured values is freely configurable. You also have the option of configuring tolerance ranges, references, warning and action limits for each process value yourself. These values are then automatically monitored.

Without Loss of Time – on Request, Alerting in Case of Deviations

If a value is exceeding or falling below the defined limit, you can have your predefined contact person notified immediately. In this way, you can ensure rapid intervention and take countermeasures.

Full Performance Capability Thanks to Integration in FASTEC 4 PRO

The additional function Process Data Acquisition offers even more benefits in combination with other FASTEC 4 PRO modules such as the MES module Production Data Acquisition as well as the MES module Traceability, which can also be used to track articles and orders.

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FASTEC 4 PRO Additional Function Process Messages

This Additional Function reads messages directly from the machine controls. The process messages are clearly arranged and form a supplementary basis for a well-founded analysis of the production process.

The Most Important Functions at a Glance

- Read out data from the machine control and store in a database
- Graphic and tabular display for fast analyses
- Filter according to various criteria, e.g. duration of the message
- Print or send evaluations and logbooks
- Export to Excel

Benefits for Your Corporate Success

- Reliable documentation of PLC messages through long-term recordings
- Fast and clear documentation in graphic and tabular form
- Extensive evaluations using various filter criteria

Record Process Messages Precisely – and Save Them Permanently

Machine controls (PLC) generate a large number of messages and alarms for you. These provide you with information about the frequency and duration of downtimes in the units.

The reasons for disturbances can be accessed by control panels on the machine control. Due to the limited storage space in the machine controls, the messages are only available for a limited period of time. In many cases they are even lost when switching off the machine. In addition, effective evaluations directly on the machine are rarely possible due to limited filter and sort functions.

On top of that, it is not only background noise that makes it difficult for the machine operator to concentrate on recording the process messages. The additional function Process Messages can help here.

Many Process Messages – Clearly Arranged

The additional function Process Messages reads process messages directly from the machine controls via a data interface, e.g. from Siemens S7. This information is stored permanently in a database. With Office Client, users such as the maintenance staff can conveniently catch up on current messages from the respective machine and act accordingly without leaving the office.

Clear, comfortable and easy to create evaluations are available at the push of a button. The number and duration of occurring messages are processed graphically or in tabular form for the defined time range, broken down to the selected machines and systems. You receive exact information sorted by frequency or duration, e.g. about the reasons for downtimes.

The analysis of the downtimes enables you to derive effective optimization strategies. You can minimize machine failures in the future and thus maximize productivity that has a lasting impact. The extensive graphical and tabular evaluations and various filter options will help you. You can even recognize short stops immediately and correct them.

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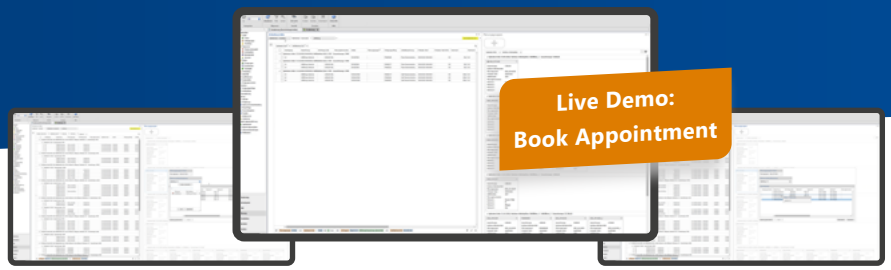

FASTEC 4 PRO Additional Function Preplanning

The ideal tool for increasing your data quality! This Additional Function sorts and groups your existing data for planning tasks - without extending/adapting data in the ERP system.

The Most Important Functions at a Glance

- Simple and individual configuration of all Transaction data – **independent of the existing master data quality**
- Comprehensive data preparation without programming effort
- Scheduling of equipment, which can be used over the entire production process
- Planning groups (campaigns) are created and transferred to the detailed planning

Benefits for Your Corporate Success

- Error-free, lead-time optimized planning based on individually prepared data, reduction of complexity
- Simple sequence planning for a defined time horizon without detailed planning down to the second
- Reduced setup effort through coordinated use of resources that can be scheduled over the entire production process
- Transparent, simplified planning through the creation of planning groups that are ideal in themselves, commonalities of products become apparent

Quick and Easy to the Optimal Data Base

When we talk about production optimization or increased efficiency through optimized planning, we are usually referring to the optimization of lead times. This requires high-quality master data and stable processes.

Preplanning Supports You in Digitizing the Daily Planning Tasks

By sorting and grouping operations based on article characteristics in combination with the experience of the planners, you increase the quality of the transaction data. This enrichment significantly improves the planning result.

Sequence-Optimized Planning

A first step towards optimized planning is improved planning of the sequence of items to be produced. Setup time, cleaning time and compatibility of successive items are of particular relevance. Preplanning is used to optimize the sequence for a specific time horizon based on article characteristics.

Allocation of Tasks and Scaling

With Preplanning, the responsibilities for the respective production processes are logically divided. This results in a task distribution that controls the workload of the planners and promotes scalability.

Grouping of Operations Into Planning Groups

The various framework conditions in the production planning process usually follow a sensible logic and therefore cannot be changed. This includes, for example, producing light products first, then dark products, or producing a batch completely on one machine. Planning groups offer the possibility of scheduling operations jointly and efficiently in accordance with these framework conditions. These planning groups are already ideal in themselves and optimized according to production time. One can schedule these planning groups at different places. An optimization as well as the overview of the related operations are always guaranteed.

Get the Full Potential out of Your Planning!

- Error-free multi-resource planning taking into account dependencies and available capacities.
- Increased adherence to schedules, early detection of bottlenecks and uncovering of capacity reserves
- Uniform, digital Production Planning
- Consistent transparency throughout the entire planning process

Detailed information & best practices in the whitepaper "Digital Production Planning"

We are happy to consult you: **vertrieb@fastec.de** | **+49 5251 1647-0**

We digitalize factories