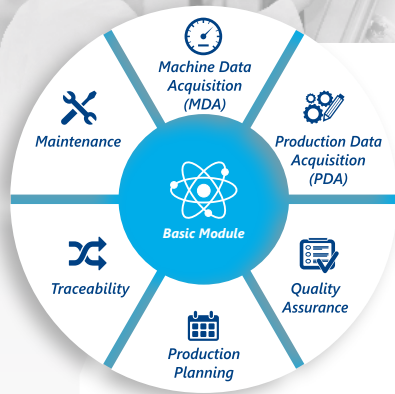


FASTEC 4 PRO Additional Functions

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:

<p>Alerting Never miss self-defined events again</p>	<p>Autonomous Maintenance Relief of the Maintenance Team</p>	<p>BI Connector Our interface to common BI tools</p>	<p>DNC + Configuration Data Easy data transfer to the machine, accelerated production steps</p>	<p>Document Display Production documents order-related directly at the terminal</p>
<p>Energy Monitoring Capture and visualize production-related energy data</p>	<p>Mobile Client View production events on the go – reliable and freely configurable</p>	<p>Monitoring States, production key figures, alarm indications – everything in sight</p>	<p>Personnel Time Recording Paperless, complete and transparent documentation</p>	<p>OPC UA-Schnittstelle Platform-independent data exchange for industrial communication</p>
<p>Production Logistics Provide material appropriately, reduce error rates</p>	<p>Process Data Acquisition View and report on process data from machines and plants in real-time</p>	<p>Process Messages In-depth analyses: read out data directly from the machine control system</p>	<p>Preplanning Excellent data quality: Fast, simple, configurable, without adjustments in ERP</p>	

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 imple-

ment 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.



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.

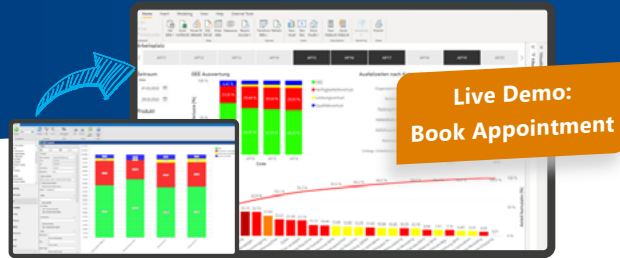
Suggestions for Improvement – Building Block of Total Productive Maintenance

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.





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.

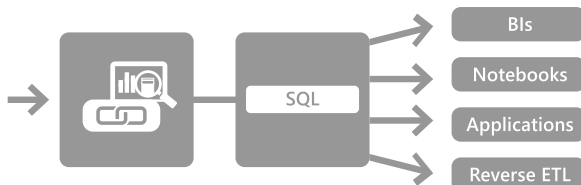
Advantages of an Evaluation Model

- 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.

- **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



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



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

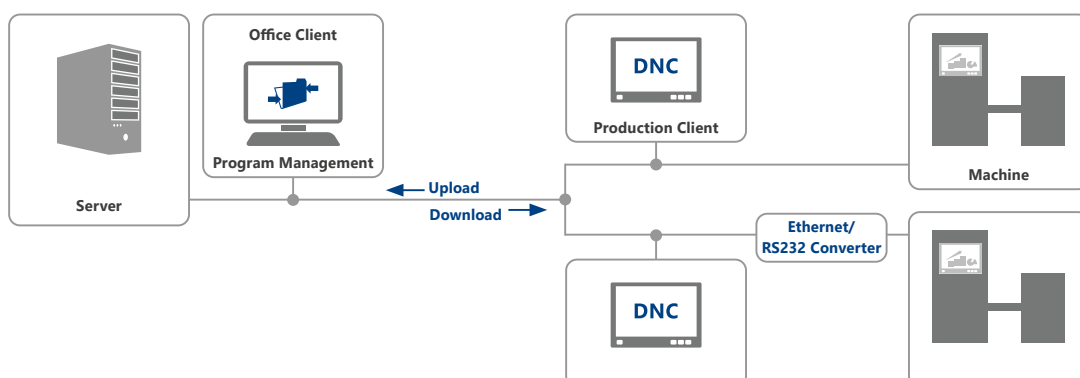
Direct Data Transmission to the Machine – No Physical Data Carriers Needed

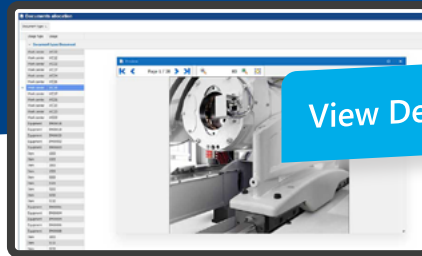
Modern machines running in your production already have highly sophisticated controls that execute production orders using NC programs, setting data records, recipes or configuration data records.

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.





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.





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 Goal

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.





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 alert 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 in your 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!





View Details

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.





View Details

FASTEC 4 PRO Additional 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 RFID.

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.





FASTEC 4 PRO Additional 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



FASTEC 4 PRO Additional 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

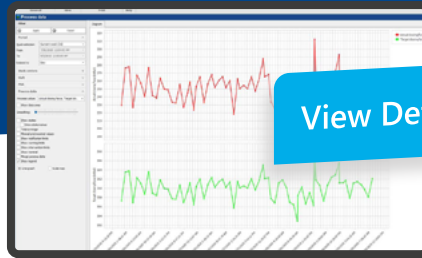
When you enter batches of delivered materials in your goods receipt, you can process them in a targeted manner. You can block or release the posted batches and thus transfer them to a production warehouse. You can also transfer warehouse stocks to an existing warehouse management system via an interface. 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.





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.

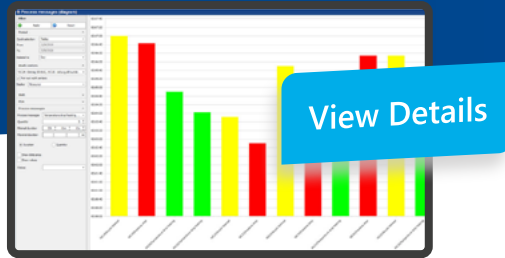
Without Loss of Time – on Request, Alerting in Case of Deviations

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.





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.

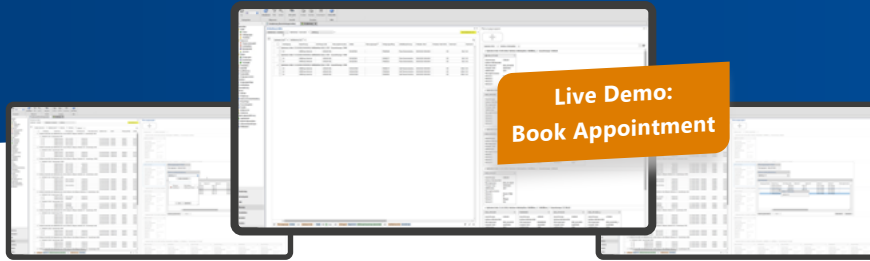
Many Process Messages – Clearly Arranged

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.





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"

