

# Room for essentials

Switching and automation components for a communicative future



**ABB**

**More open, flexible design**

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... and above all, can be quickly and easily implemented – these are the qualities required of future switch and automation components.

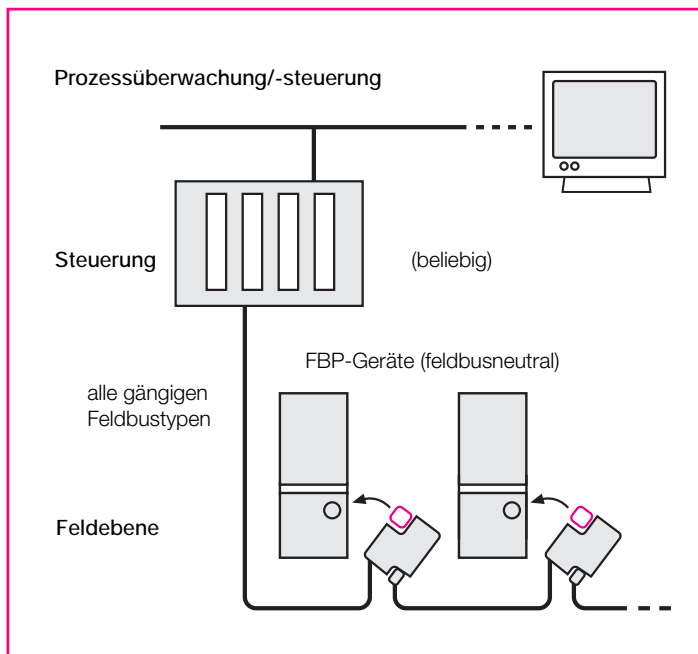
### **Straight forward design**

Design expectations are fulfilled by a suitable connection to all components involved in the automation process. Standardized, freely selectable bus systems provide for fast and flexible solutions to automation problems in machine and plant construction; in addition, they are more flexible and reliable. And – the processing time and costs can be reduced noticeably by complete devices and standardized function modules.

### **Application potential**

The future of communication begins with the new product family of ABB switch and automation components which can be networked. This creates room for unlimited new application-specific ideas. New functions. New savings potential. New competitive advantages...

# A new dimension in communications



The simple FBP installation concept



Suitable for a wide range of different fieldbus types

The new ABB product family is a communications device range of switching and automation components which can be combined easily with standard fieldbus systems.

## One device for all fieldbus types

Each complete device, and each function module within the product family, has a fieldbus-neutral interface. A specially prefabricated connection cable establishes the communications connection with its bus-specific plug interface. In this way, flexibility, transparency and reliability in the process are achieved. The connecting, operating and diagnostic elements are placed at the front of all devices providing increased ease of installation.

## The components

The fieldbus plug (FieldBusPlug) is the central communications element of the new product family. It connects devices and device combinations of different functions and characteristics as well as simple sensors with automation devices. A great variety of switching and automation modules belong to the product family separated into similar performance characteristics, e.g. devices for motor protection, motor control and standard sensors.

## The FieldBusPlug connects

The FieldBusPlug, abbreviated FBP, provides a name to the new product family as a connecting element. To make their FBP ability clear, all components belonging to the system also have the additional FBP in their type designation. The definitions of the respective fieldbus standards apply here.

## Compact, communicative, cost-effective

The FBP system, with its new installation concept, opens a multitude of further possibilities for centralized and decentralized applications. Simple integration into the process is just one of the smart new innovations of this system. This is accompanied by the compact, space-saving designs of the function modules, flexibility during planning and designing and cost-effective assembly thanks to complete function units. These are qualities which create new freedom. Diagnosis functions which have been integrated into the devices from the range represent the highest practical use. The new system offers considerably more creative freedom and possibilities to design and operate a machine or plant.

## Use new freedom...

... to the advantage of increased quality, reliability and availability. The advantages that the FBP system provides the user are already clear to see.

Independent planning through free choice of bus systems

- > Simplified assembly, commissioning, maintenance and warehousing
- > Transparency right through the process levels





# Remarkable effects ...



Networked in no time

## ... on the design of a machine or plant

### Shorter throughput times

Until now, wiring and cabling has been expensive and time-consuming in machines and plants. Standardised plug-in field bus connections now provide fast installation and the highest level of flexibility.

### Higher product quality

Prefabricated devices reduce the failure possibilities. Standards make general planning and project planning more reliable, the assembly more effective and reduce the commissioning time. Diagnostic functions support this.





## Smaller control cabinets

The FBP product range includes particularly compact device versions for the control cabinet as well as device assemblies for on-site assembly. The products provide a high level of functionality in minimal space.

## Shorter project times

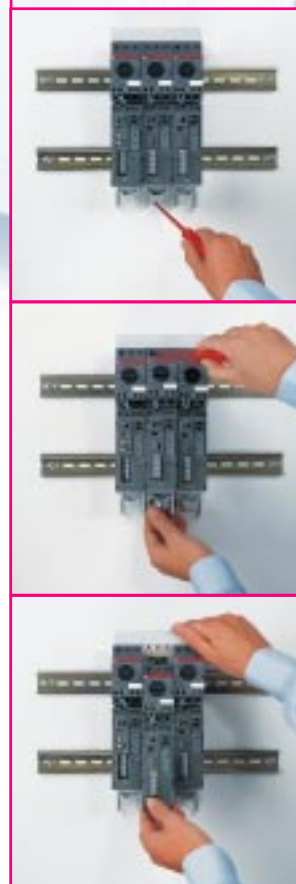
The project planning time is considerably reduced thanks to the pre-assembled elements and the function modules which are already completely coordinated.

## Improved response time

Reacting flexibly to customer requirements means being able to carry out modifications even shortly before completion. All devices can be replaced in a minimal time; this also applies for the fieldbus connection.

## Reduced warehousing costs

Due to the fieldbus neutral interface, a device from the FBP range can be installed regardless of the implemented fieldbus type which positively affects system planning.



Exchange of devices without releasing the comb-shaped bar

# Remarkable effects ... on the control construction

## Increased quality

Fewer error sources, clear function allocations and easy diagnostic functions are the important contributions of the FBP system which increase the quality of the end product.

## Reduced manufacturing time

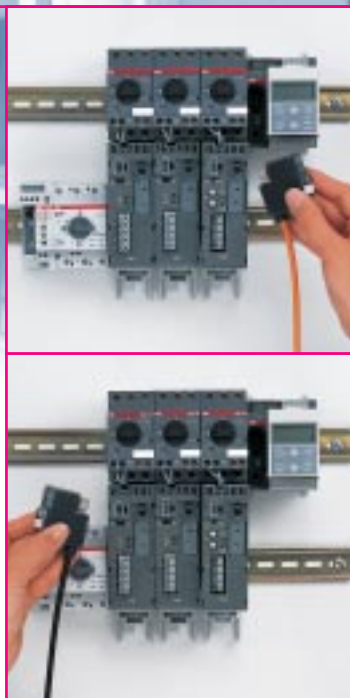
The use of FBP components considerably reduces assembly time. Depending on the type and function, the devices are fastened on one or two DIN rails. The alternative on parallel rails can be used to achieve increased vibration resistance. And another advantage – the low number of variations in the system enables fast parts allocation which decreases manufacturing time.

## Less planning and scheduling time

The low number of variations within the system, due to the fieldbus-neutral interface, reduces the warehousing time and facilitates the entire goods handling. Each function module is suitable for any fieldbus because the bus-specific technology is in the plug, not in the device. This simplifies the choice of device and ensures accurate component selection.

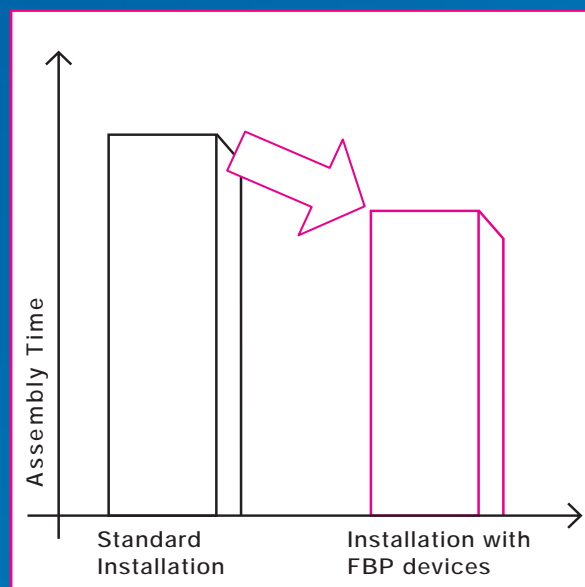
## More reliable planning

Unit components, which are used with FBP devices, can be integrated gradually into existing installations. This facilitates planning and maintains your cost base.



Fuseless motor circuit with  
AS-interface bus connection or with  
DeviceNet bus connection





# Remarkable effects ... on the process

Status display directly on device



## Increased availability of machines and units

The FBP components have extensive diagnostic functions which conventional switching devices do not provide in this form.

- > The state of the function module is indicated by LEDs.
- > The state of the fieldbus plug and the bus is also indicated by LEDs.



Display of motor operating data

Regardless of function

- > preventive maintenance is enabled through a preventive diagnostic function (e.g. number of switching cycles)
- > the motor operating data can be displayed on a control panel.

This allows possible malfunctions to be recognized before downtime and production failure occur. An error occurring can be visualized thanks to the communication ability of the components and can therefore be remedied faster.





## **Complete accessibility**

The new FBP system is extremely communicative. All device information concerning the connected automation device is transmitted via the fieldbus and can be displayed within the entire process with the aid of visualization software of the respective automation system. The information which is transferred in the process depends on the performance data of the selected bus system.

## **Preventive maintenance**

Ease of operation can usually be seen in the details: Some FBP devices provide the option of “preventive maintenance” to enable preventive measures to be introduced on time and as specifically planned. This leads to a considerable reduction in the machine or unit down times.

## **Trouble-free conversion**

The components of the FBP system can be integrated gradually into existing units. This provides decision room concerning timing and conversion and staying within budget.

# Easy process connection

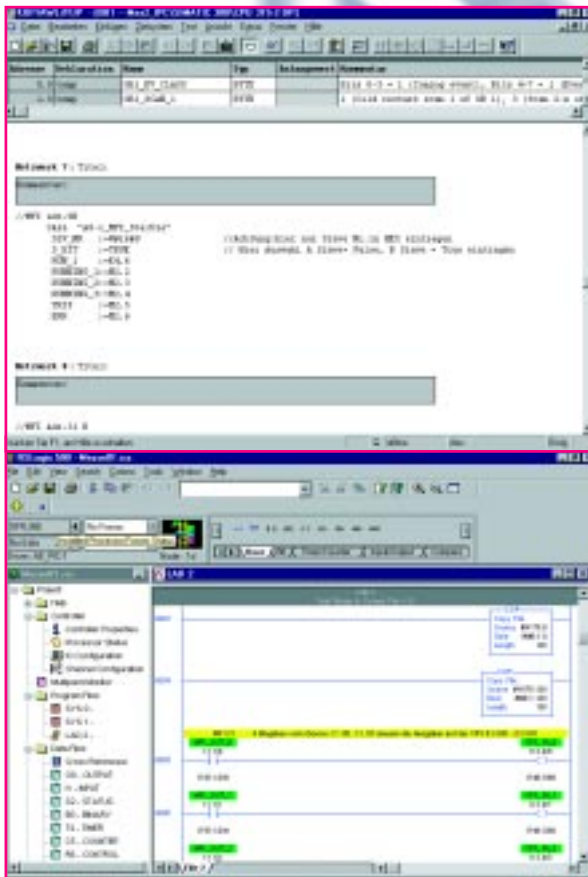
## Intelligence in the plug

The newly developed FBP fieldbus plug establishes the connection of the individual switching and automation components to the process. The design of the plug is very simple: A fieldbus-neutral plug is located at one end of the cable and a plug with the fieldbus-dependent interface is located at the other end. Intelligence has been integrated into a compact plug to “convert” neutral device data into a data language which the respective implemented fieldbus type can understand. All FBP components and standard sensors belonging to the system can be connected directly to the process.

## Simple communication with control technology

The FBP system also shows its adaptability in the connection to the automation device. With the aid of standardized software functions, FBP components and automation devices can be integrated into the process via standard fieldbus.

And another advantage: Irrelevant of the bus characteristics, address devices are provided which enable the addressing to be performed directly on the device. Alternatively, addressing can occur via the automation device or a bus coupler.



Simple engineering through functional modules

Fieldbus connection (M12)





Only 1 plug design for all applications

Compact design  
(17 x 52,5 x 48,5 mm W x H x D)

Fieldbus-neutral device  
connection

Bus-specific electronics

Different cable lengths available

Connection to fieldbus

Fastening with locknut or  
retaining screw

Recessed grips for easy pushing on  
and pulling off



Easily recognizable:  
FBP-capable



## Components for different tasks

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The following pages provide an initial overview. The component family is constantly supplemented with new products. Ease of operation and possible applications are continuously extended.

## Motor circuit

**Fuseless motor circuit MSD11-FBP**, for switching and protecting individual motors and their supply lines. For line current from 0.1 to 12 A. Particularly compact motor starter unit for operating a motor in one direction of rotation. Front control, display and connection elements facilitate the handling.



**Fuseless motor circuit MSD22-FBP**, for switching and protecting individual motors and their supply lines and motor operation in two directions of rotation. For line currents from 0.1 to 12 A. Particularly suitable for small space conditions due to the very compact width of only 1.77" (45 mm). Front control, display and connection elements facilitate the handling.



**Motorstarter Fieldbus Interface MFI21-FBP**, for coupling to the motor protection switch MS 325, with integrated control functions and preventive diagnostic function for particularly sensitive process areas. In connection with MS 325 for line currents from 0.1 to 25 A. 1 digital input (mechanically from MS 325), 3 digital inputs 24 VDC, 3 digital outputs (relay). Different motor start controls such as direct start, reverse start and wye-delta starting.



**Universal Motor Controller UMC22-FBP**, electronically protects motors from overload. Particularly communicative and powerful with integrated control functions and preventive diagnostic function. The "flagship" in the fieldbus-capable motor protection range for line currents from 0.24 to 63 A, with 6 digital inputs 24 VDC and 3 digital outputs (relay) in just one device. The motor start mode can be set directly on-site via a removable control panel. Direct and reverse starts and the functions wye-delta start and actuator are provided.





# Components for different tasks



**Softstarter PST** for the soft-start of motors with a rated current of up to 1800 A. With the help of the integrated man-machine-interface the device and motor data can be either set up or visualized in one of eleven languages of your choice. Numerous functions for diagnosis will help you to find a potential fault directly on location. Integrated functions, e. g. pump or fan-operation are standards as well as the integrated programmable in- and outputs.



**Moulded case circuit breakers Tmax T4/T5** for protecting and switching in energy distributions AC/DC, for motor protection or in applications up to 1000 V for rated uninterrupted currents of up to 630 A. Tmax T4/T5 are equipped with interchangeable protection releases – magnetic, thermomagnetic or electronic – which makes them so flexible in use. With their high breaking capacity of up to  $I_{cu} = 200 \text{ kA}$  at 415 V the Tmax T4/T5 circuit breakers can be used in every application.

## Sensors



**Input module for wireless proximity switches** for signals of up to 120 inductive wireless proximity switches. The input module detects the signal status and monitors the proper function of every wireless proximity switch. The initiators receive their energy from an electromagnetic field and communicate with the input module with the help of a bluetooth interface.

**Standard sensors (PNP, NO)**, which are equipped with M12 plugs can be connected to the fieldbus plug directly. This includes sensors with different functions such as inductive sensors, for locating metallic objects or capacitive sensors, for locating dielectric-type materials such as glass and plastic.



## Relevant certifications

As with all ABB products, also the FBP components are tested in accordance with European, North American and international guidelines and are approved by the companies responsible. These include GL, DNV, BV, RINA, LRS, CSA and UL. The products carry the CE identification.

CE



## Certified quality

The entire development process of an ABB product, from the idea right through to the sale, is subject to a quality management system certified to ISO 9001.

## In harmony with the environment

Protection of the environment is a central theme for ABB. It includes protection of resources, avoidance of harmful materials as well as manufacturing products which are recyclable and durable. These aspects are taken into account by the implementation of an integrated environmental management system to ISO 14001 which is regularly checked through environmental audits. A Life Cycle Assessment is currently being undertaken by ABB for new product developments.



# No limits

A person in a dark suit stands on a modern bridge with a metal railing, looking out over a vast lake and distant mountains under a cloudy sky. The scene is captured in a wide-angle shot, emphasizing the openness of the landscape.

## Worldwide...

... customer proximity to ABB is taken literally. Customers who use the FBP product family have access to the international branch network of ABB and can depend on speed, competence and good customer services. Included in our customer service, for example, are numerous standard and intensive training courses offered by ABB several times a year. On request, application-related seminars are available on-site within Germany.

## Questions ...

... on any areas related to the subject “communicative switching and automation components” can be answered by staff in our regional sales offices.

For the most current addresses please refer to the Internet:

[www.abb.com](http://www.abb.com)  
> About ABB  
>Where to find us

**ABB STOTZ-KONTAKT GmbH**  
P. O. Box 10 16 80  
69006 Heidelberg  
Germany  
Phone: +49 (0) 6221 701-0  
Fax: +49 (0) 6221 701-729  
Email: [desst.info@de.abb.com](mailto:desst.info@de.abb.com)  
<http://www.abb.de/stotz-kontakt>

In the case of special technical questions, please contact the ABB Helpline. This can be contacted by E-mail: [desst.helpline@de.abb.com](mailto:desst.helpline@de.abb.com) or by telephone 0 62 21/7 01-14 44 or fax 0 62 21/7 01-13 82 during the usual business hours.

The ABB Helpline team, formed by project planning and programming experts can answer your questions and provide practical product and application knowledge.

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ABB STOTZ-KONTAKT GmbH  
P. O. Box 10 16 80  
69006 Heidelberg  
Germany  
Phone: +49 (0) 6221 701-0  
Fax: +49 (0) 6221 701-729  
Email: [desst.info@de.abb.com](mailto:desst.info@de.abb.com)  
<http://www.abb.de/stotz-kontakt>