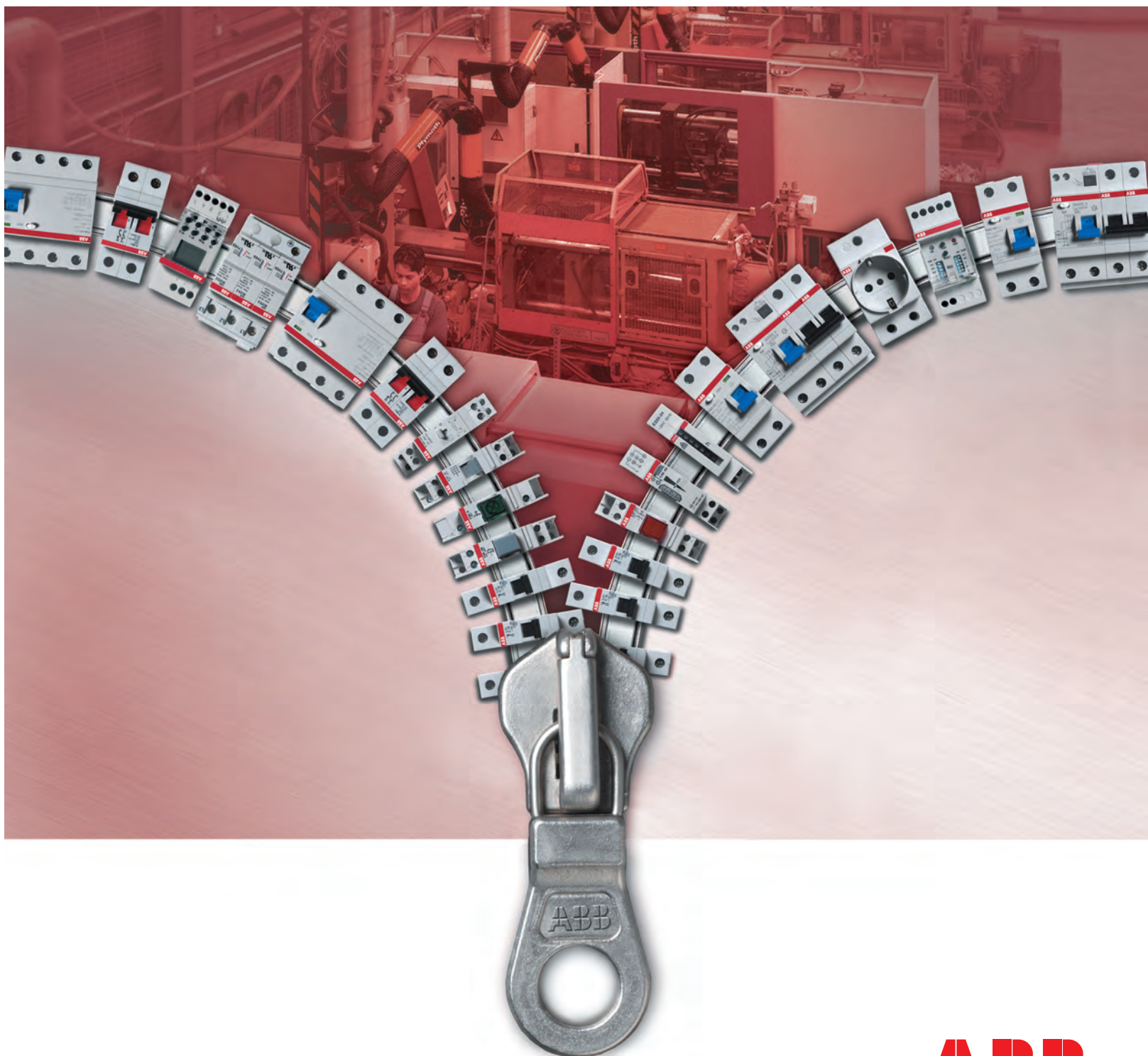


# ABB Solutions for Original Equipment Manufacturers

Components and equipment



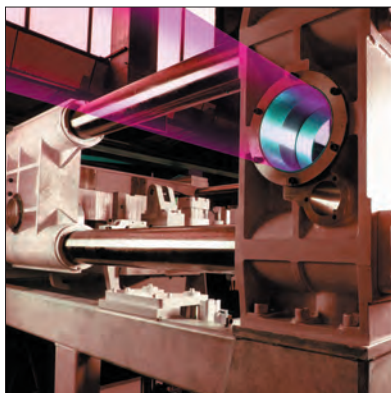
**ABB**



Industrial IT is a new concept developed by ABB that integrates all levels of a company's activities, incorporating, in one single system, the project design, operating and maintenance of plants, control and automation systems, production process management, and, when required, marketing, sales and financial and administrative activities. Integration is the key aspect of this new technology: all ABB products will function as one single integrated system, allowing the customer to get top performances from his plant.

## Industrial IT: solutions from ABB

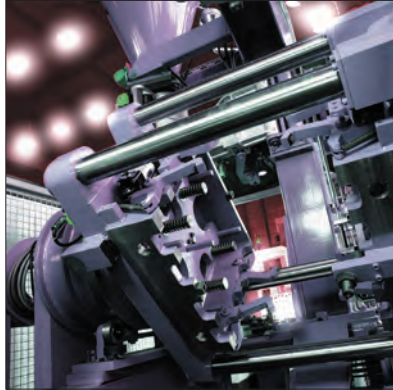
This is why ABB has created a standardised software platform (AIP: Aspect Integrator Platform) that uses common languages, links and libraries. All ABB software will be made compatible with this platform to offer the IT Industrial user integrated hardware, software and engineering solutions, project management, training, spare parts and service.







Products and technologies will be divided into about thirty functional categories, each dedicated to a specific sector of the company's production or administrative activity. ABB then brings each device or piece of software in line with Industrial IT standards to make sure that it integrates perfectly with the rest of the products.



Numerous benefits are to be had from a high level information system like Industrial IT that would be difficult to achieve with currently available management solutions.

Right from the start the user will benefit from the advantages of using qualified products: in fact, all the standardised information about characteristics, installation, usage and maintenance are available from the easy-to-use software, as well as technical aspects about how devices work and the interactivity between certified products, integrated in the various production and industrial process contexts.





## An expert for all kind of applications

### **Equipment mounted components for driving, measuring and protection**

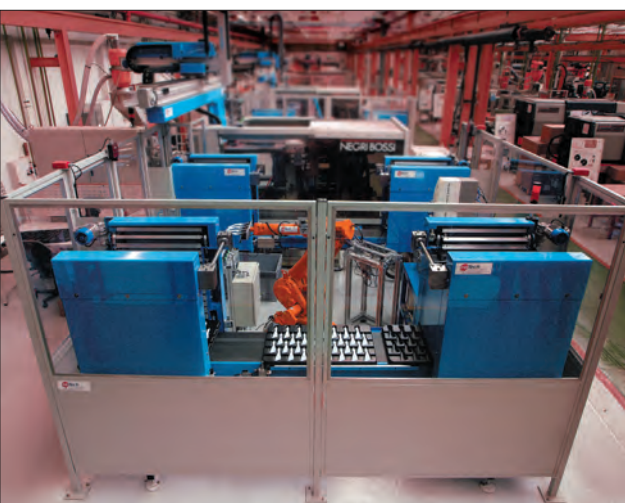
Anyone manufacturing machines is well aware of what customers expect in terms of technology and quality and how important costs are. The way a machine runs must always guarantee the best possible results. It is essential for the operators that it is simple and safe to use and maintenance must be fast and must solve any problems that may exist.

Therefore, OEMs must be able to count on selected components that will guarantee, in the long term, and in every foreseeable operating situation, a reliable machine that satisfies all the necessary safety requirements.



### **In automation stations and switchboards for command, control and monitoring**

In order to produce industrial control and command stations it is often necessary to reconcile functional features with ergonomic requirements and a sometimes unfavourable location in terms of space and position with respect to other machinery. Therefore, switchboard engineers and installers must know how to operate with great flexibility in order to satisfy the specific needs of the various application situations, and the best help to them, in carrying out this task, can come only from the availability of a range of equipment and components that not only guarantees the highest quality, but is also sufficiently extensive to give them personalised choices for every type of project.







### **In production plants for measuring, regulating and displaying**

A plant that is to be used for only one production activity or one that is integrated within a much broader, complete industrial process, is always the result of the combination of a variable number of technological devices that contribute to carrying out the specific operating phases to which it is dedicated.

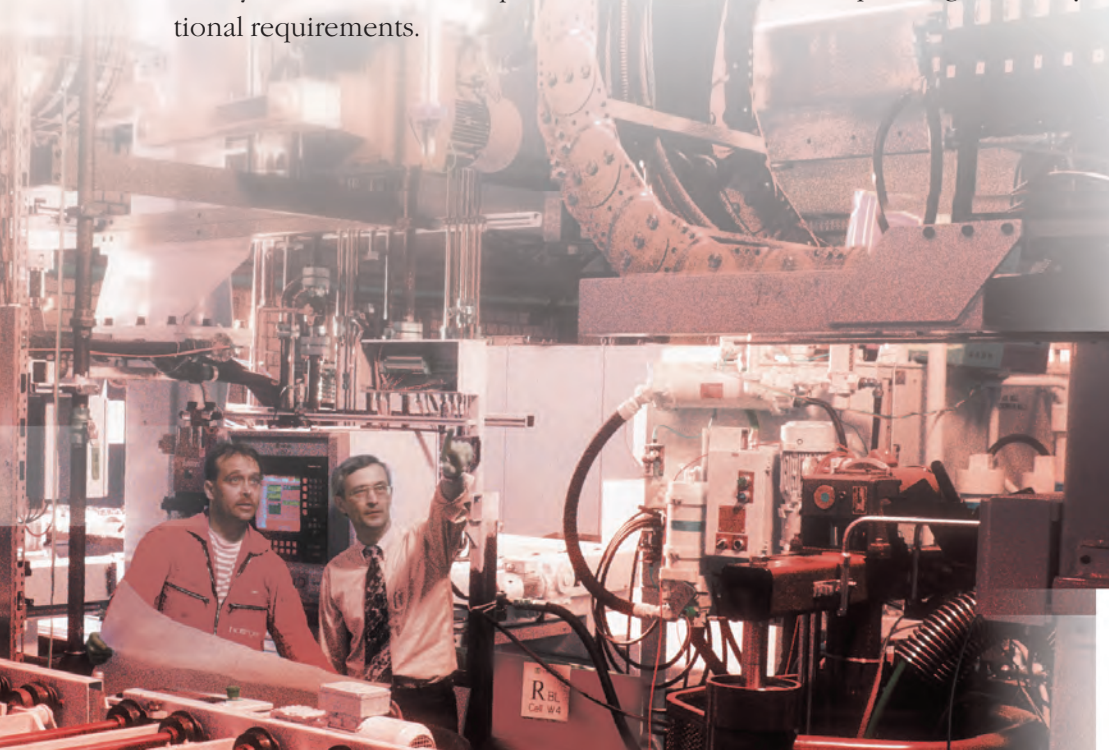


When producing the machine, therefore, all the general aspects of quality, safety, reliability, specific to an individual machine, must be taken into consideration, multiplied by the number of devices comprising the plant itself, as well as the almost always considerable role played by the transmission of signals and commands between the internal devices (instrumentation, sensors, actuators, etc.) and to the other plants that make up the whole industrial process. It is clear from this that the project designers and manufacturers of plants can gain the greatest benefit from a well-structured range of apparatus and components technically co-ordinated for all possible functional requirements.

### **In all cases, a single solution:**

#### **ABB To optimise all the technological functions of a modern industry**

Thanks to the wide choice of ABB products and technologies for automation, including motors, drives, command and protection equipment, measuring and control instrumentation, OEMs, project designers, switchboard manufacturers can offer their customers the best solutions to optimise their technological investments and maximise results in terms of quality, cost reduction and operating efficiency.





## One partner for:

- OEMs
- switchboard manufacturers
- system engineers
- consultants

The search for increasingly high quality standards to satisfy changing market requirements is a problem that many manufacturing industries have in common. This inevitably affects the whole “production chain” upstream from the production plants of end products: in fact it concerns the manufacturers of machinery used in such plants, the switchboard manufacturers that make the electro-mechanical and automation equipment and, of course, also concerns the producers of the components necessary for making the machinery. The main aim of all of these people is to offer a technologically evolved, high quality product that must, at the same time, make it possible to keep production costs as low as possible.

Fully aware of these fundamental requirements, ABB constantly updates the technological and functional characteristics of the equipment and systems it supplies, widening its global offer so that the product users can always find the support they need to achieve their respective aims.

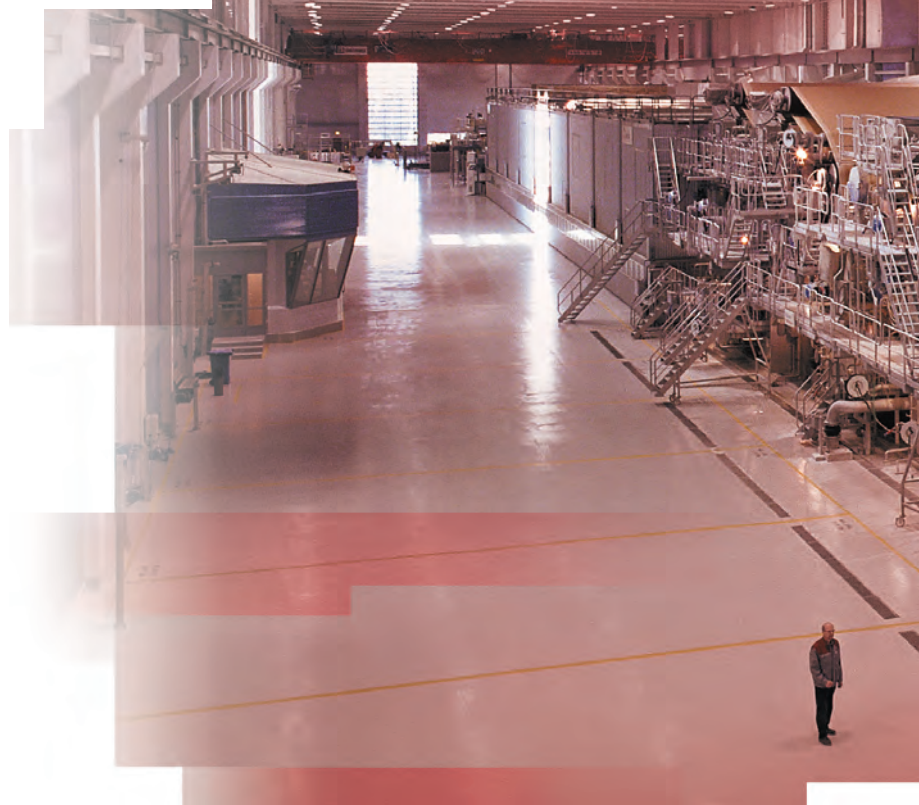
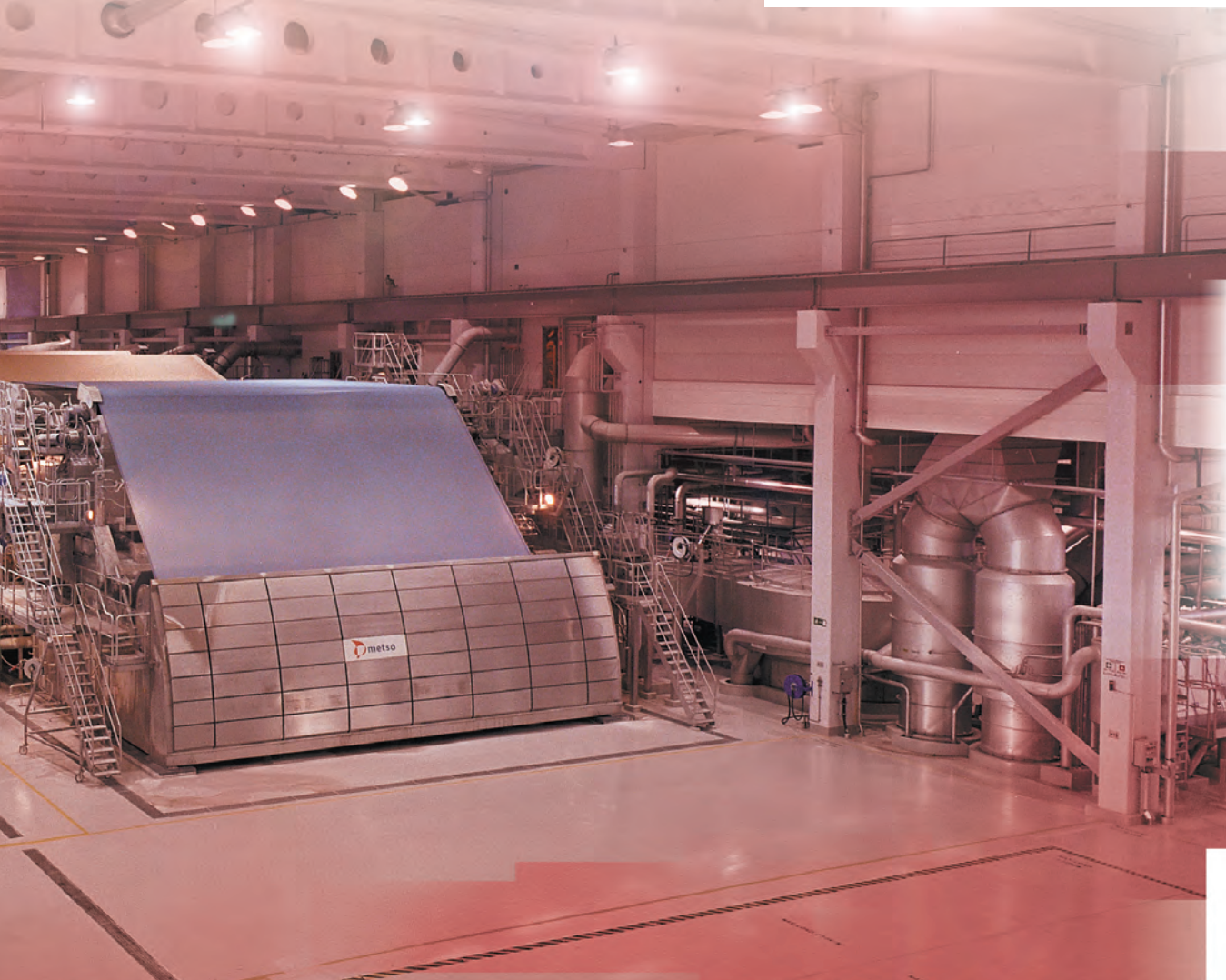






ABB is therefore the ideal partner of manufacturers and professionals, to whom it is also able to guarantee comprehensive, professional and efficient assistance all over the world thanks to its presence in more than 100 countries. Generally speaking, and depending on the application destination of each type of equipment, ABB products comply with the main international Standards (in particular European and North-American ones) and with Naval Register prescriptions.



Components and systems

General applications

System pro M compact®





# Products for general applications

## Command and protection

### ■ Sheet-steel boards



#### **Boxes, multipurpose enclosures**

H: from 300 to 1200 mm, W: from 200 to 800 mm,  
D: from 150 to 300 mm

#### **Switchboards and cabinets**

H: from 1800 to 2200 mm, W: from 400 to 1200 mm,  
D: from 300 to 1000 mm

#### **Control and command consoles**

H: from 960 to 1350 mm, D: from 470 to 990 mm

### ■ Circuit-breakers and switches



#### **Automatic**

- MCBs (depending on the series): In up to 125 A;  
Icu up to 50 kA
- MCCBs (depending on the series): In up to 3200 A;  
Icu up to 200 kA
- ACBs: In up to 6300 A; Icu up to 150 kA

#### **Isolators**

- Switch disconnectors: from 16 to 3150 A
- Switch fuses: from 16 to 800 A
- Moulded-case: from 125 to 3200 A

### ■ Motor protection and command



#### **MCCBs**

- Moulded-case: In up to 1600 A; Icu up to 200 kA
- Modular motor starters: regulation field  
from 0.1 to 25 A

#### **AC & DC contactors**

- For power up to 400 kW (depending on the series)
- Miniature sizes

#### **Thermal overload & protection relays**

- Bi-metal
- Electronic

#### **Starters**

- DOL, star-delta, reversing for normal and  
severe starters

#### **Soft starters**

From 3 A to 1800 A (depending on the series)

#### **Command and signalling units (modular and compact versions)**

Push-buttons, switches, warning lights,  
luminous floor boxes, pedals, cam switches







## Command and protection

### ■ Programmable logic controllers



#### **Micro PLCs**

*From 14 to 100 I/U*

#### **PLCs**

*Up to 1000 I/U in remote configuration*

### ■ Devices for auxiliary functions



#### **Electronic timers**

#### **Electronic industrial relays**

*For current, voltage, phase controls etc.*

#### **Safety devices**

*For all risk categories provided by Machine Directive*

### ■ Equipment mounted components



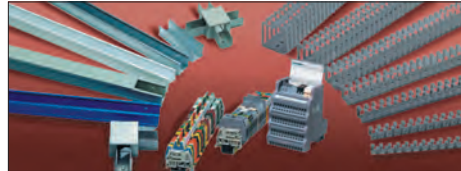
#### **Limit switches**

- In plastic: width 30 to 40 mm
- In metal: width 40 to 60 mm

#### **Position sensors**

*Inductive, capacitive, photo-electric, ultrasound*

### ■ Wiring components



#### **Wiring ducts**

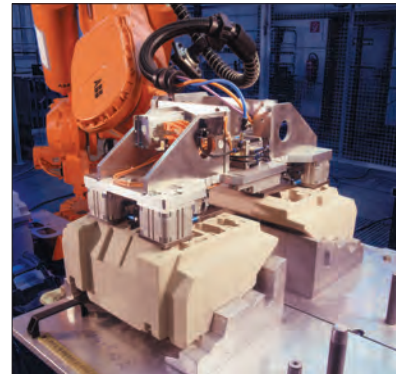
*Ducts for rigid or flexible cables*

#### **Metal trunkings**

#### **Terminals**

- Self-stripping connections in ADO technology
- Screw and spring terminals

#### **Wiring accessories**





# Products for general applications

## Process instrumentation

### Chemical and physical measuring instrumentation



#### Pressure, differential pressure, level

- Complete range of intelligent electronic transmitters and Fieldbus
- Pneumatic transmitters

#### Temperature

- Field and switchboard transmitters
- Thermo-couples, thermo-resistances and mantel cables
- Barriers and remote I/O

#### Capacity

- Electromagnetic transmitters
- Vortex, Swirlmeters
- Hot wire and variable area
- Coriolis effect for mass capacity

#### Liquids analysis

- Sensors and transmitters for pH/Redox, conductivity, dissolved oxygen, turbidity
- Selective ion, colour-metric and UV monitors

### Control instruments



#### Regulators and recorders

- Microprocessor regulators
- Line and dot video-graphic recorders
- Analogue and digital gauges

#### Process control

- Scalable process control
- Fieldbus applications

#### Force measurement products and systems

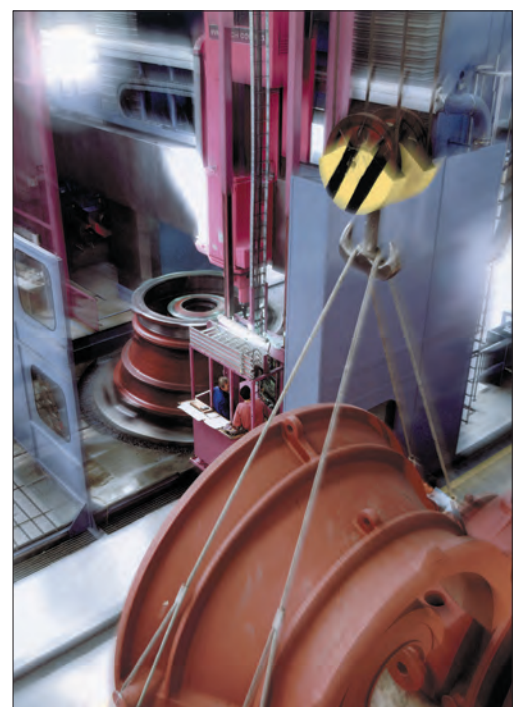
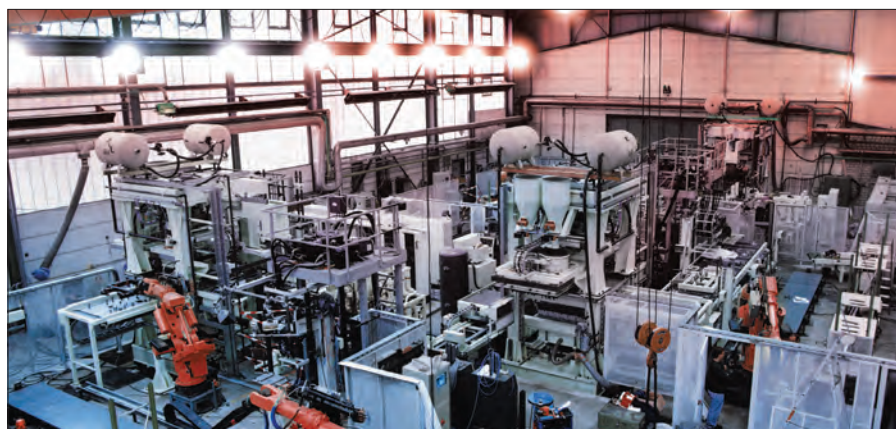
- Solutions for measuring force in industrial processes aimed at improving quality and productivity

### Regulation and actuation



#### Devices for valves

- I/P field, switchboard and rack converters also for danger zones
- Traditional, pneumatic membrane actuators
- Electric regulation and On-Off servomotors
- Pneumatic and electro-pneumatic positioners







## Motors and generators

### ■ LV motors and generators



#### **Standard aluminium, cast iron and steel motors**

- M3000 motors with eff1 efficiency;
- M2000 motors with eff2 efficiency

#### **Motors for hazardous areas**

#### **Marine motors**

#### **Brake motors**

#### **Single phase motors**

#### **Integrals motors**

#### **Wind turbine generators**

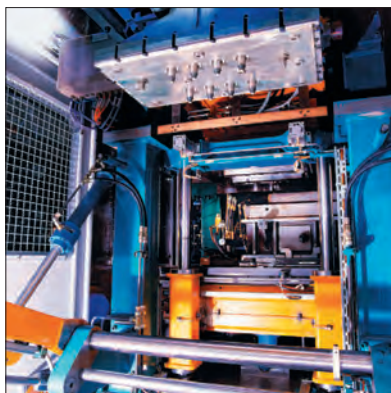
#### **Special motors and generators**

### ■ Servomotors



#### **Brushless technology**

Continuous pairs from 1.3 to 39 Nm: rated speed from 1500 to 6000 Rpm



## Drives

### ■ Direct current drives



#### **DCS series**

- Power from 10 to 20000 kW,
- voltages from 220 to 1000 V, IP00-IP31
- SingleDrive and MultiDrive

### ■ LV converters



#### **DTC technology (ACS 600, ACS 800)**

- Power from 1.1 to 3000 kW,
- voltages from 220 to 600 V, IP00-IP54
- SingleDrive and MultiDrive



#### **PWM technology (ACS100, ACS140, ACS160 and ACS400)**

For all applications up to 37 kW

### ■ Servodrives



#### **Minivector 300 series**

- Rated current from 3 to 5 APMS
- Direct mono-phase power supply from 230Vac +/- 10%

#### **Bivector 300/500 series**

- Rated current from 3 to 25 APMS
- Three-phase power supply 230Vac +/- 10% - 400Vac +/- 15%

#### **Bivector MK2 series**

- Rated current from 3 to 25 APMS
- Three-phase power supply 110Vac - 480Vac +/- 10%



# Products for general applications

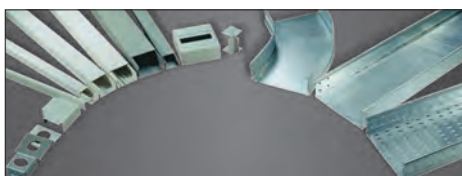
## Other products

### ■ Plastic enclosures



- Consumer units and special enclosures in various protection categories
- Emergency enclosures
- Modular enclosures for IEC 309-1 sockets

### ■ Trunking systems

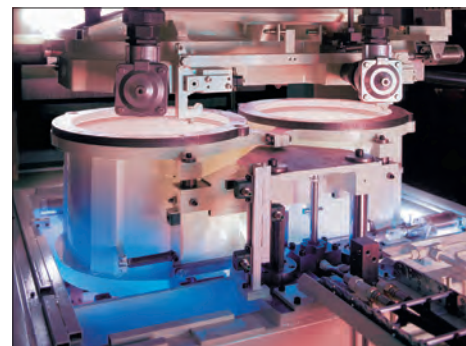


- Feeder and cable trunkings
- Industrial trunkings and cable trays

### ■ LV capacitors and filters



- Low voltage capacitors
- Power factor controllers
- Capacitor banks
- Third harmonic filters



### ■ Metal distribution boards



Switchboards, installation boards, distribution boards, monoblock and kit up to 3200 A



#### **Wall mounted cabinets**

Fully insulated  $\text{⏚}$   $\text{⏚}$ , Degree of protection: IP31, IP43, IP54, IP55  
Rated current  $I_n$ =250 up to 355A

#### **Floor standing cabinets**

Fully insulated  $\text{⏚}$   $\text{⏚}$ , Degree of protection: IP54, IP55  
Rated current  $I_n$ =250 up to 850A

#### **Main distribution boards**

**(for industrial and commercial switchgear systems)**

Fully insulated  $\text{⏚}$   $\text{⏚}$ , Degree of protection: IP54  
Rated current  $I_n$ =1700 up to 3500A



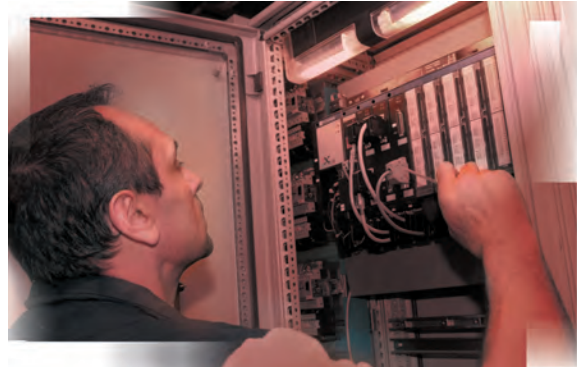




## Services

### Low voltage on line

*An Internet site that is a real working instrument, divided into various sections including indexes of all products, selection and coordination tools, news and documentation.*



### Product indexes

*Full information on the range of control and automation products and installation and distribution equipment is available either by categories (eg. circuit-breakers) and in alphabetical order so that it can be found at each visitor's ease and needs.*

### Product selection and coordination

*A range of tools to select the products that best fit in each specific application, to coordinate them for backup and motor protection, to choose the most appropriate kits for retrofitting. All are easy and friendly to use.*

### Technical library

*The multilingual collection of all manuals, catalogues, certificates, drawings, pictures and other documents available for our range of products in each Country. Files are saved in the PDF format and can be downloaded for free. The news section provides for the most updated information about products.*

### Contact lists

*The addresses, e-mails and web sites of ABB local contacts all over the world to be as close as possible to our customers and always fulfil their expectations.*



## System pro M compact®: The perfect fit to your application



A wide product range suitable for all applications in residential, industrial and commercial installations. Thanks to the compatibility between the new System pro M compact® range and the System pro M range, ABB offers many additional functionalities like:

- protection and switching
- checking and monitoring
- control and programming

Shape and dimensions of the new series allow both precise adapting in already existing installations and continuity in terms of profile and appearance.

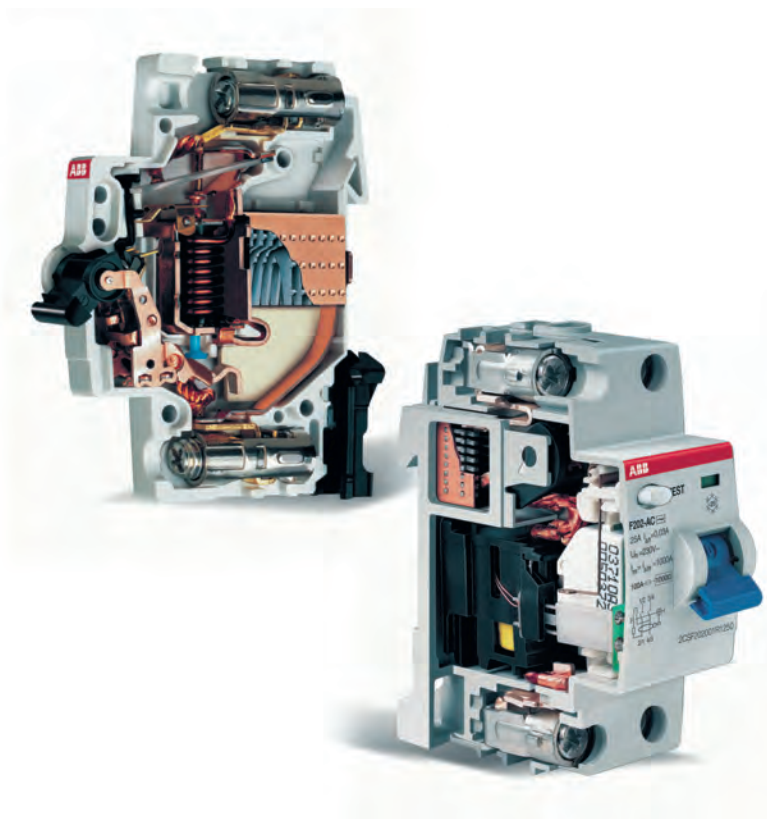
Time saving in cross-wiring within groups and combinations of devices is another advantage.

The technologically innovative bidirectional cylinder-lift terminal enables synchronous closing of the front and rear wiring input.

Highest safety standard for the installer thanks to protection against electric shock according to EN 41140.

Marking of devices is reliable and clear.

Both supply and connection with busbars from top or bottom is admitted.







- **Special characteristics like K and Z**
- **Universal products for international use IEC + UL + CSA**
- **Wide range for all different levels of requirement**



#### The System pro *M* compact® range

##### ■ **MCBs:**

- new circuit-breakers

##### ■ **RCDs:**

- new residual current circuit-breakers (RCCBs)
- new RCD-blocks
- new residual current circuit-breakers with overcurrent protection (RCBOs)

##### ■ **Auxiliary elements:**

- new universal signal contact switch/auxiliary switch
- new auxiliary switch for circuit-breaker extensions
- new shunt release
- new undervoltage release

##### ■ **MDRCs-Surge protection devices**

##### ■ **MDRCs-Protection devices**

In addition to MCBs and RCDs, ABB supplies other modular devices for protection such as residual current relays and fuse holders.

##### ■ **MDRCs-Command devices**

This category includes devices that are operated manually to command the electric system: contactors, latching relays, switchisolators, switches, pushbuttons etc. Typically they are installed to control lights from several points of the same circuit or to pilot user devices with a high number of operations.

##### ■ **MDRCs-Load management devices**

Overload relays, load management switches, anti black-out lamps, time switches and the other modular devices in this category react automatically to variations of parameters and other events in the system to allow for plant optimisation.

##### ■ **MDRCs-Measurement devices**

The range of devices in this category is very wide, including a great number of auxiliary components and accessories that make installation in switchboards and consumer units practical and economic.

##### ■ **MDRCs-Other devices**

The range of ABB MDRCs also includes bells, transformers etc.

##### ■ **Various accessories**



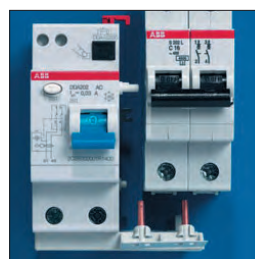
## System pro M compact®: The perfect fit to your application



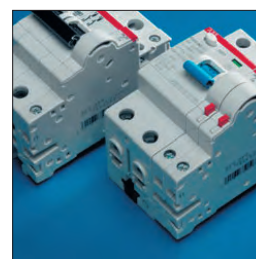
MCBs are also available with an integrated auxiliary contact (1 NO or 1 NC). Existing installations can be easily upgraded to include auxiliary switch functionality.



Availability of a quite wide range of factory fitted RCBOs.



RCD-blocks DDA 200 2P, 3P, 4P up to 40 A fit into two modules. Versions in 63 A sizes are supplied with two additional terminals for remote tripping.



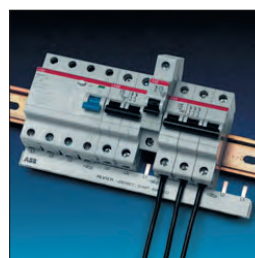
Universal signal/auxiliary and auxiliary contacts fit on S 200, F 200 and DS 200.



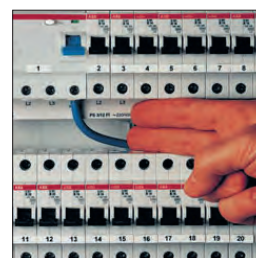
Without busbars two terminal spaces can be used for cables with different cross sections: incoming supply with supplementary terminal up to 50 mm<sup>2</sup> from the front



side. Safe connection between DDA 200 and S 200 thanks to not losable coupling elements, opportunely shaped pins and plastic clamps.



Special quick fastening for an easy removal of the devices from the assembly pressing upwards, both for MCBs S 200 and RCCBs F 200: the only in the market that can be removed without a screwdriver.



More working space between component rows.

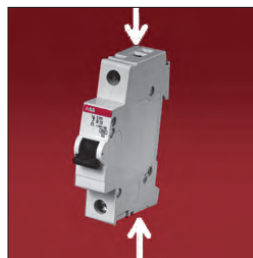




- Special characteristics like K and Z
- Universal products for international use IEC + UL + CSA
- Wide range for all different levels of requirement



New System pro *M compact*® range is compatible with the System pro *M* range, thanks to the configuration of new vs old terminals.



Supply from top or bottom either with cables or busbars.



Safe terminal technology: the terminals offer protection from misconnection.











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