

A-Line Contactors

Motor Starter Systems



A-Line

– the contactor range for the new millennium

The new ABB-Line of low voltage motor control and protection components is based on the new A-Line contactors. It is the product of the latest thinking in electrical design and component layout, incorporating the most recent developments in safety aspects, materials and electronics.

Developed from many years of experience and in close cooperation with the customer, this new range offers better total system functionality. Fit to take you and your products into the new millennium:

- *ABB-Line – a system concept*
- *A complete range of ABB Contactors*
- *Easy to install*
- *Safe and simple to work with*
- *Improved environmental performance*
- *Comprehensive range of accessories*



The breakers and large contactors share the same width and design features. They are designed to work together as the perfect match.

The ABB-Line – a system concept

- Fully co-ordinated
- Better total solutions
- Compact, with comprehensive mounting alternatives
- Developed to meet market demands

The A-Line contactors together with ABB's fuse and fuseless short circuit protections and overload relays provide the basis for a new generation of apparatus designed to an ABB-Line system communality. Our focus during development was not just to improve each product but also to provide designers, engineers, installers and end users with the best possible system solutions.

The breakers and large contactors share the same width and design features. They are designed to work together as the perfect match for safe motor control and protection, saving mounting space, installation time, mounting material and cabling. The systems meet type 2 co-ordination requirements (IEC 947.2.1).

The contactor, breaker and electronic overload unit can be seen as a single unit, with minimum space needed between the apparatus. Easy-fit connection bars are available for faster and more compact connections of the units. The contactor with the new variant of the ABB Isomax breaker with built-in electronic motor protection, is an even more compact solution. This system solution will trip the contactor on overload and includes the common Isomax protection features.

There are several different alternatives for mounting the units together. Either in-line or side-by-side, depending on the space available in the panel. Either way you want it – what you get is a compact system.

The new range was developed together with customers worldwide and other contactor users – not by technicians alone. Some customers were involved during the complete design and some in the extensive research prior to the development.



Contactor with an OS switchfuse.



DLA-starter



Contactor with the new electronic overload relay.

The new ABB-Line was developed together with worldwide contactor users – not by technicians alone.

A complete range of ABB Contactors

The A-Line contactor range has the same design from 9A up to 750A (AC3 duty) motor loads – and for a broad range of DC and other AC applications. Thus making it easier to match your needs with fewer components.

The new large contactors offer the same possibilities as the breakers for rear connection of the power terminals. This gives you more flexibility in mounting options. Rear connection also allows a more compact starter with terminals protected from the front. Front terminal connection is naturally also possible. The width of the contactors, smaller than most other competitive contactors, means further benefits in compact installations.

Shock resistant materials, together with smart design, ensure high ratings even at 690V and an insulation voltage of the complete range up to 1,000V. This also provides high levels of electrical and mechanical durability.

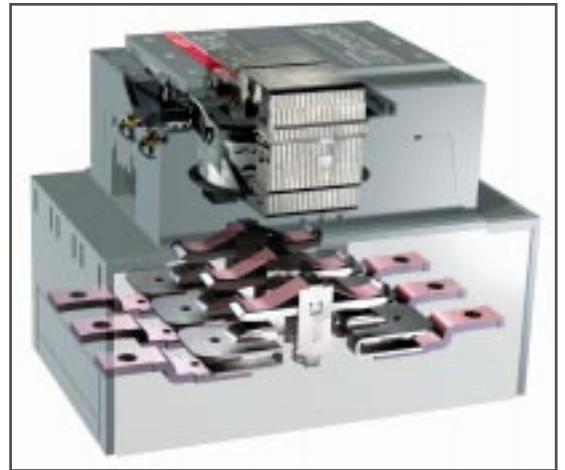
Rapid mounted accessories that are co-ordinated across the entire range makes system design and installation easier. The accessories have been designed so that the same type of accessory fits a wide variety of contactors.

The AF-contactor variants have inputs for controlling the contactor with low voltage signals, i.e. from a PLC, eliminating the need of external PLC interface. The contactors also have a built-in electronic hold-function, without using any auxiliary block. The standard coil interface reduces power consumption, ensuring more reliable operations and cost effective installation.

All technical documentation of contactor data, co-ordination tables and CAD drawings are available in traditional catalogues or via the Internet (<http://www.abb.com/contactors>).

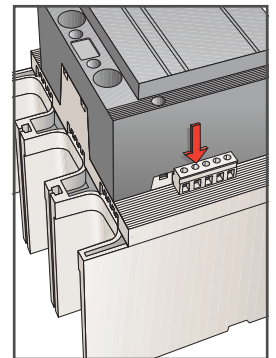
- A-Line contactors from 9 to 750A
- Versatile choice of installation possibilities
- Small dimensions for compact installations
- New materials with improved insulation
- Wide range of common accessories to simplify stocking
- Comprehensive documentation and drawing files





On the large sizes, the new concept puts the coil above the main terminals. This gives increased safety and better matching with other system components.

The AF-contactor variants have two inputs for controlling the contactor with low voltage signals, i.e. direct from a PLC.



Easy to install

The new contactor range is quickly and easily installed in the panel. Installation of bolt-connected cables or busbars is easily made due to a specially designed three pole nut retaining device. All accessories are snapped onto the contactor without the need of tools. Installation and maintenance is further simplified by clearly visible terminal markings.

The magnet is enclosed inside the upper housing. This makes it fast and easy to change the coil when needed since the contactor and power cables do not have to be dismantled.

The 'upside-down' design of the large contactors enables a close and fast installation with standard ABB breakers and switch fuses. The apparatus can be mounted with a minimum of space between the units, giving a compact total installation.

- Fast and simple installation
- All terminals clearly marked on the front
- Easy installation of system components





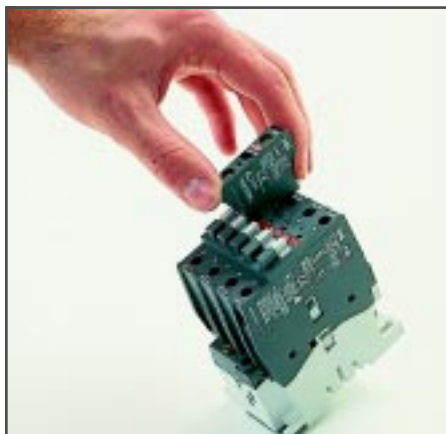
The low terminals on the contactor together with the connection bars makes the connection with breakers fast, compact and easy.



Clearly visible terminal markings simplify installation and maintenance.



All auxiliary terminals are front mounted on the contactor to provide safe and easy access even in compact panels.



All accessories are snapped onto the contactor without the need of tools.



Safe and simple to work with

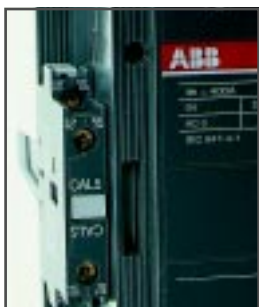
All main terminals are well protected, even without the shrouds. This is thanks to the built-in terminal bars featured in the complete contactor range. A wide selection of well-fitting shrouds is available for further protection.

Inspection of the contacts always involves checking wear and signs of abnormal current on the contacts. The new A-Line large contactors make this safe and simple. When inspecting the contacts, the upper housing is simply removed without dismantling the power terminals. The moveable contacts are inspected at the rear of the removed upper housing and the fixed set is inspected in the base. If necessary, the contacts are easily replaced. In addition, removal of the upper housing with the magnet and movable contacts means that the contactor cannot be operated while the unit is being inspected.

All main auxiliary circuits are front mounted and well separated from main terminals to allow for safe and easy access – even in compact panel installations (see picture on previous page).

Both the auxiliary contact blocks and the contactor provide clear visual indication of status (open/closed contacts) which further improves operator awareness and safety.

- All live parts are protected against accidental contact (IP20 from the front)
- No risk of unintentional operation while inspecting contacts
- Terminals and auxiliary circuits are mounted for safe and easy access
- Clear visual status indicators



High standards of shrouding (to IP20 from the front) keep the installation and the installer safe.

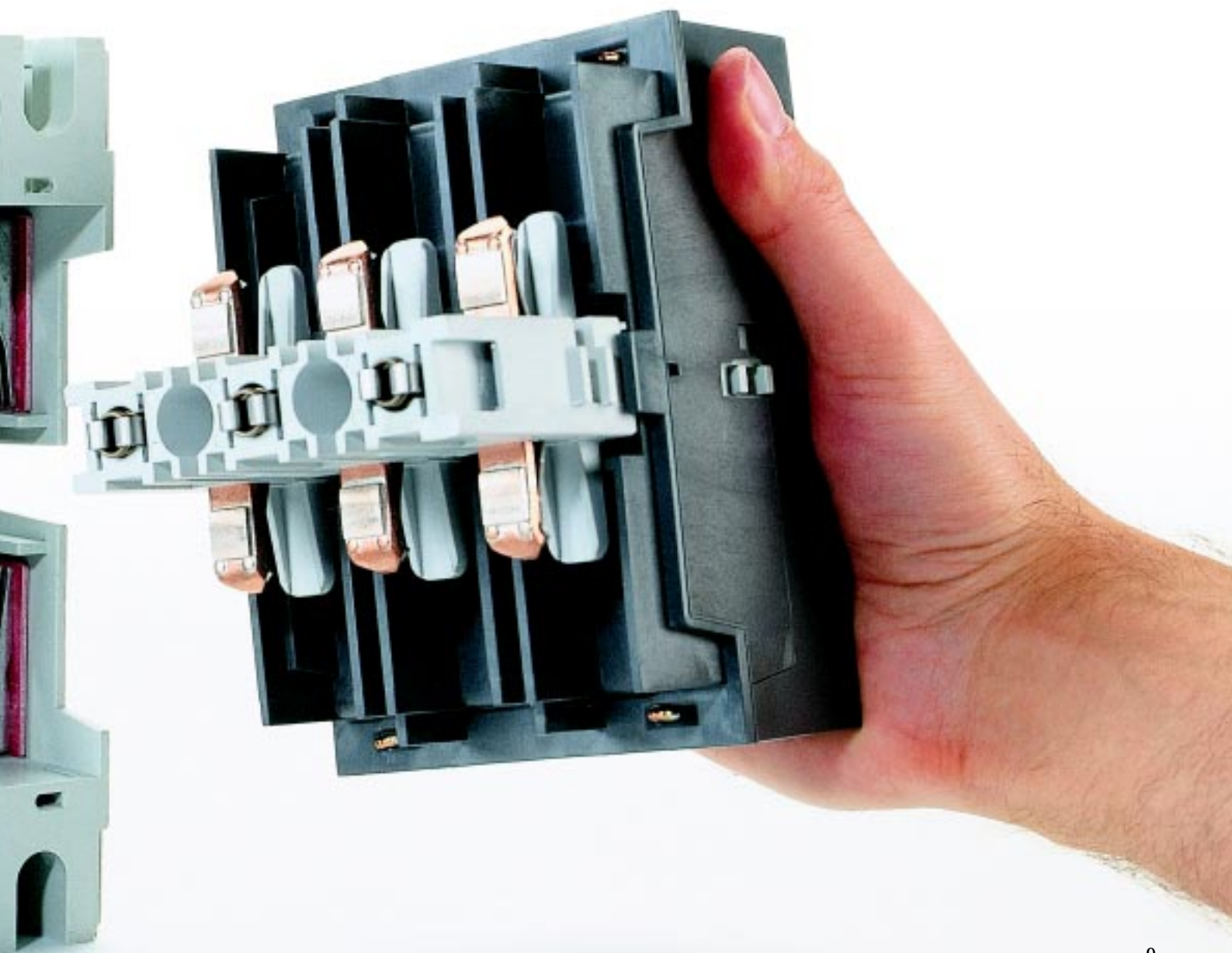
Both the auxiliary blocks and the contactor provide clear visual indication of status (open/closed contacts).



Improved environmental performance

The development of the A-Line contactor range put environment in focus all the way – from production and installation to use and recycling. Environmental performance is improved through manufacturing with no mixed materials, no ozone-depleting halogens or cadmium. The A-Line has a low impact on the environment (Low LCA index).

The products are manufactured in an ISO 14001 factory to internationally recognised safety standards. This means constant monitoring and improvements of processes to minimise all environmental impacts.



Comprehensive range of accessories

The A-Line contactors include a complete range of accessories to fit different user needs in a variety of applications.

- Auxiliary contact blocks
- Vertical and horizontal mechanical interlocks
- Surge suppressors
- Terminal options
 - for double cables
 - for copper cables
 - for aluminium cables
- Connection options
 - Stardelta busbar kit
 - Reversing starter busbar kit
 - Phase to phase busbar kit
 - Terminal extensions/enlargement
 - Connection bars between contactor and MCCB/Switch fuse
- Timers
 - Electronic and pneumatic
- Thermal overload relays
- Electronic overload relays
- Terminal shrouds

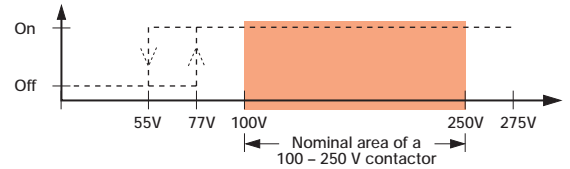


Coil Interface

Contactors above 400A AC3 duty come with the coil interface as standard (AF-contactor variants). The AF-contactor variants are also available for contactors between 50–400A AC 3 duty as a variant. Coils cover a wider voltage range so that fewer variants cover a greater range of needs, i.e. one coil covers 100 to 250V DC and 45–66Hz. Other voltage ranges available are 24–60V DC, 48–130V DC 45–66Hz, 200–500V DC 45–66 Hz. The coil provides distinct opening and closing with no bounce or chattering, eliminating the major cause of contact welding and coil burning.

This also considerably reduces contactor noise and coil consumption by up to 2/3 resulting in less heat inside panels and lowers electricity consumption.

The coil interface is fitted with custom ASIC electronics to monitor the supply voltage, control pull-in and hold operation, regulate coil current and monitor the magnet position. All contactors are prepared for future use of communication busses.



With the electronic coil versions, single step on and single step off voltage eliminates chatter. This reduces contact wear and the risk of welded contacts.



World-wide support, industry-wide experience

ABB provides total support in the form of dedicated resources, highly developed technologies, highly trained manpower and internationally recognised standards. ABB has companies and representation in almost every country in the world, drawing upon more than one hundred years in the electrical business. International resources and a local presence. All products are supported by extensive research, constant testing and full documentation.

The new range of motor control apparatus is supported by technical documentation, drawing standards and design guides. This, with improved marking and more compact size, makes it easier than ever to integrate our products into your projects.

