

A-Line Contactors

Motor Starter Systems

AC 1033



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:

- *A-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 coordinated**
- **Better total solutions**
- **Compact, with comprehensive mounting alternatives**
- **Developed to meet market demands**

The A-Line contactors together with ABB's short circuit protection products and overload relays provide the basis for a new generation of apparatus designed to an ABB-Line system commonality. 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 coordination 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 ABB Isomax breaker featuring 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 alternatives for mounting the units together: In-line or side-by-side, depending on the space available in the panel. Either way you want it — you get a compact system.

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

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



DLA starter

Contactor with the new electronic overload relay.



A-Line contactor will directly couple with OS fusible switch.

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 making it easier to match your needs with fewer components.

The new large contactors offer the same possibilities as the Isomax 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. 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 coordinated 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. All technical documentation of contactor data, coordination tables and CAD drawings are available in traditional catalogs or via the internet at www.abb.com/usa/abbcontrol

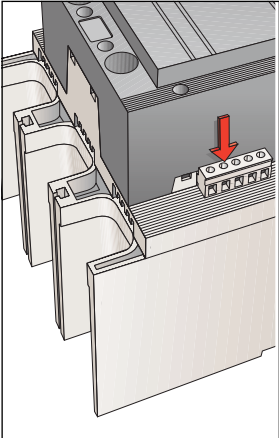
- **A-Line contactors from 9A to 750A**
- **Versatile choice of installation possibilities**
- **Small dimensions for compact installations**
- **New materials with improved insulation**
- **Wide range of common accessories to simplify stocking**
- **Comprehensive documentation and drawing files**





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

The AF-contactors 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 disconnected.

The design of the large contactors enables a close and fast installation with standard ABB breakers and fusible switches. They 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**





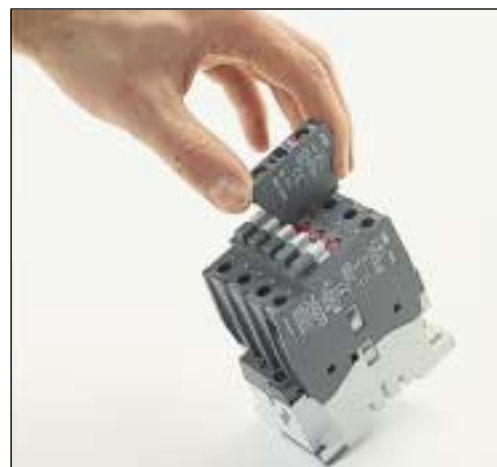
The low terminals on the contactor with the connection bars makes connection with breakers fast, compact and easy.



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 due 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 disconnecting 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 auxiliary contact blocks are well separated from main terminals to allow for safe and easy access — even in compact panel installations (see photos on page 7).

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).

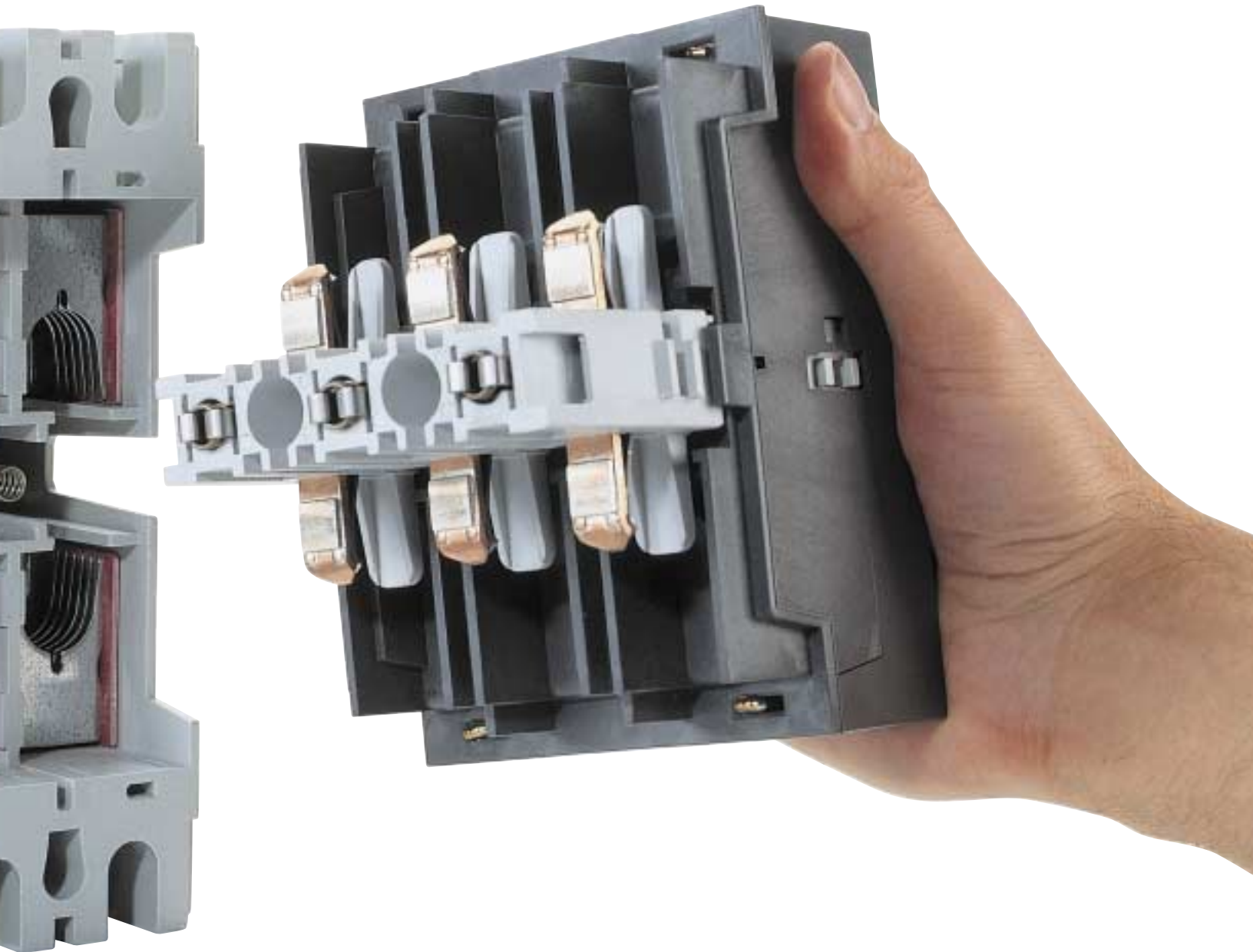


Improved environmental performance

Development of the A-Line contactor range puts 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.

A-Line products have a low impact on the environment (Low LCA index) and are manufactured in an ISO

14001 factory to internationally recognized safety standards. This means constant monitoring and process improvements of processes to minimize environmental impact.



Comprehensive range of accessories

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**
 - Wye-Delta busbar kit
 - Reversing starter busbar kit
 - Phase to phase busbar kit
 - Terminal extensions/enlargement
 - Connection bars between contactor and MCCB/fusible switch
- **Timers**
 - Electronic and pneumatic
- **Thermal overload relays**
- **Electronic overload relays**
- **Terminal shrouds**

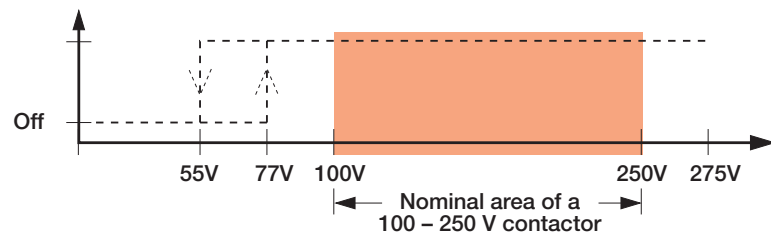


Coil interface

Contactors above 400A AC3 duty come with the coil interface as standard (AF-contactor types). AF contactors are also available for contactors between 50 – 400A AC3 duty as an option. Coils cover a wider voltage range so that fewer coils cover a greater range of needs, i.e. one coil covers 100 to 250VDC and 45 – 66Hz. Other voltage ranges available are 24 – 60VDC, 48 – 130VDC, and 200 – 500VDC at 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 66 percent — resulting in less heat inside panels and lower 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 for 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-recognized 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.



Low Voltage Products & Systems

ABB Inc.
1206 Hatton Road
Wichita Falls, TX 76302
Tel. 888-385-1221
940-397-7000
Fax 940-397-7001