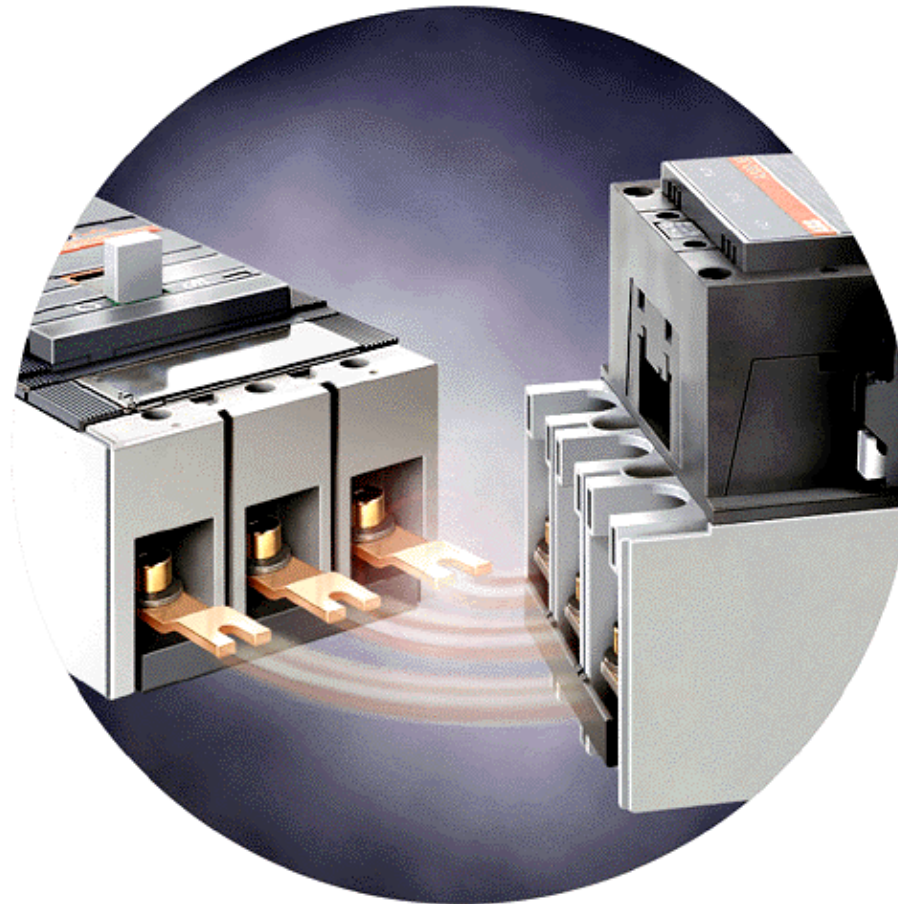


*New Generation ABB Contactors*

# A New Contactor Range from ABB



**ABB Control**

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## *New Generation ABB Contactors*

# The ABB range of A contactors



A 9, A 12, A 16



A 26, A 30, A 40



A 50, A 63, A 75



A 95, A 110



A145, A185



A210, A260, A300



AF400, AF460



AF580, AF750

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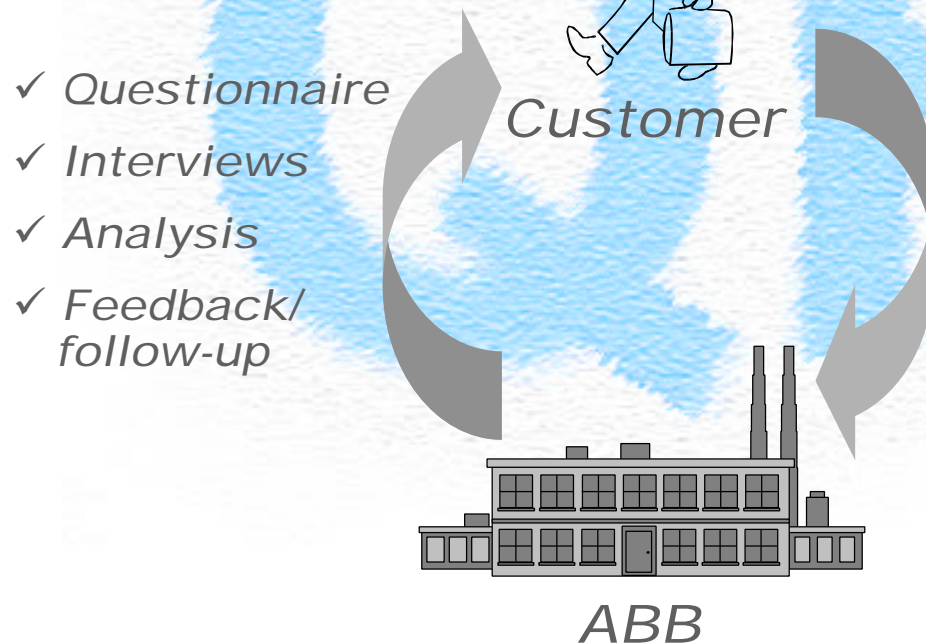


## *New Generation ABB Contactors*

# New range developed from customer requirements

### *QFD - Quality Function Deployment*

- *a systematic way to ensure that the customers' needs are met*
- *customers are involved throughout the whole process*



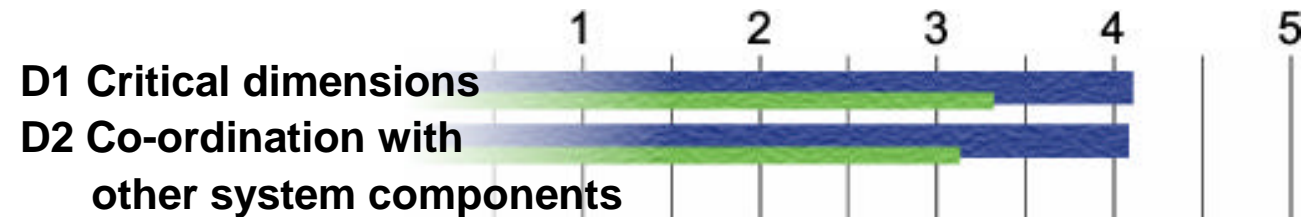
*Final product*

**ABB Control**



# Example of QFD - Analysis

## D System components/co-ordination



## E User friendliness



Blue bar is customers preference  
Green bar is the rating of EH range



## Participating customers

### OEM

**AirCond**  
**Comp**  
**Crane**  
**Drive**  
**Genset**  
**Lift**  
**Pump**  
**Wind**

Carrier, Trane  
Atlas Copco, Kaeser, Ingersoll Rand  
Liebherr  
ABB Strömberg Industry, Robicon  
Elcat, Tranudis, Exide  
Kone, OTIS, Schindler Elevator  
Grundfos, Weir, Firetrol, Hubbel  
Micon

### Industry

RockWool, Holmegaards glaesverker,  
Wisa Forest, Saugbrugsforeningen,  
Brunvoll, Union, Korsnäs, STORA Billerud

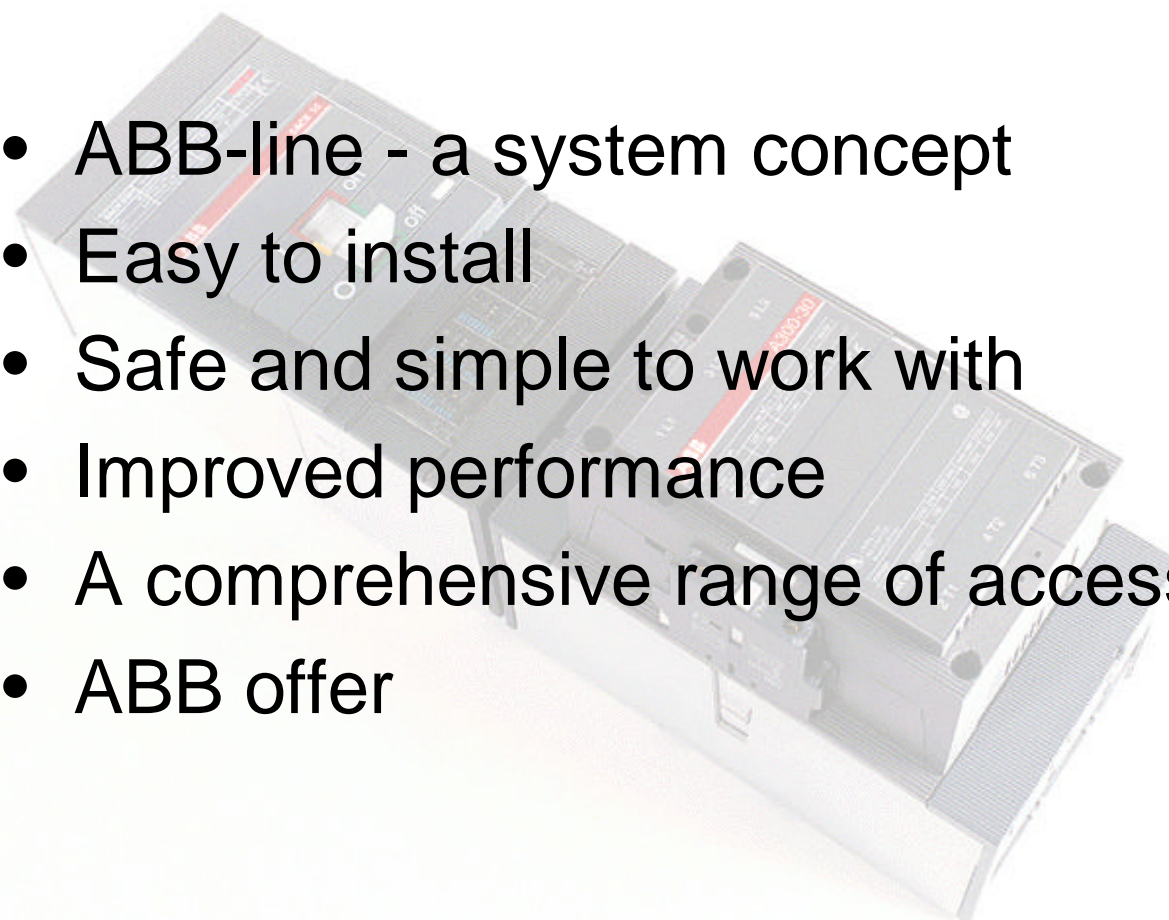
### Panel Builders

ABB Installation Neutral, Schubert, Demas,  
ABB Electric, Circuit Electric, DanControl,  
ABB FIDIS, Vahva Sähkö, Nuova Esi,  
George Kontoulis, ABB Distribusjon,  
Storm Elektro, UME, ABB Installation,  
Delta Electrical Systems, GEC, S&I, Kontex  
ABB Gebäudetechnik, Cegelec, TCS,  
ABB Installasjon, Rolls Royce IPG

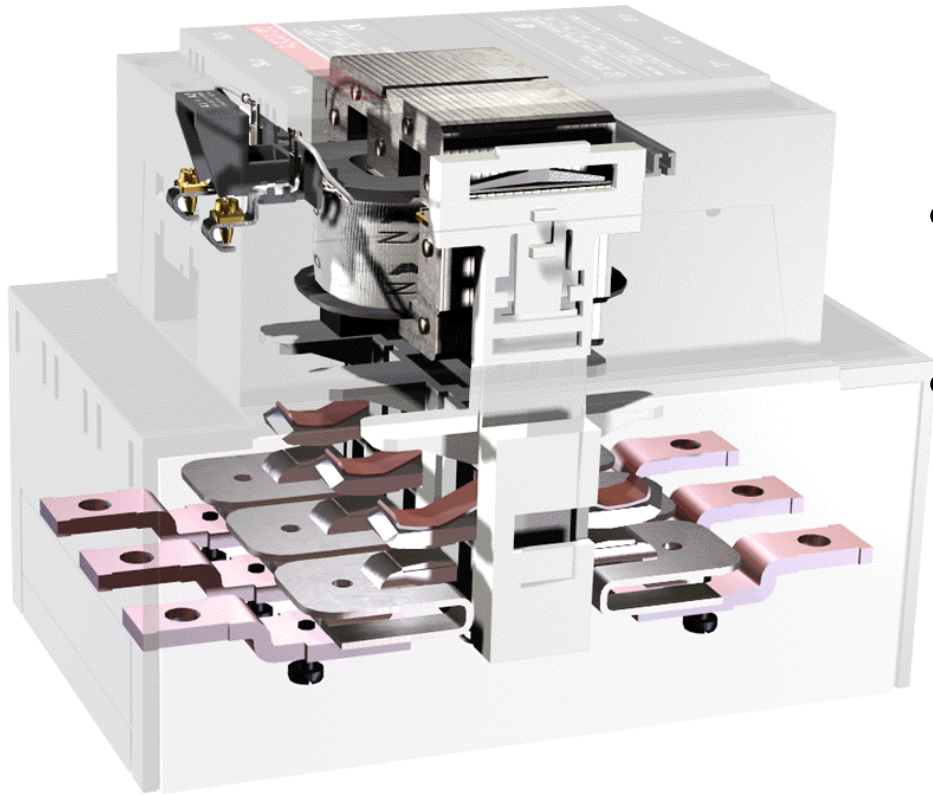


## **ABB contactors**

- ABB-line - a system concept
- Easy to install
- Safe and simple to work with
- Improved performance
- A comprehensive range of accessories
- ABB offer



## **New design of large contactors**



- **Terminals at the same level as other system components**
- **Contactor fits perfectly with ABB breakers, switch fuses and overload relays**

**ABB Control**

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## ABB contactors - a compact range

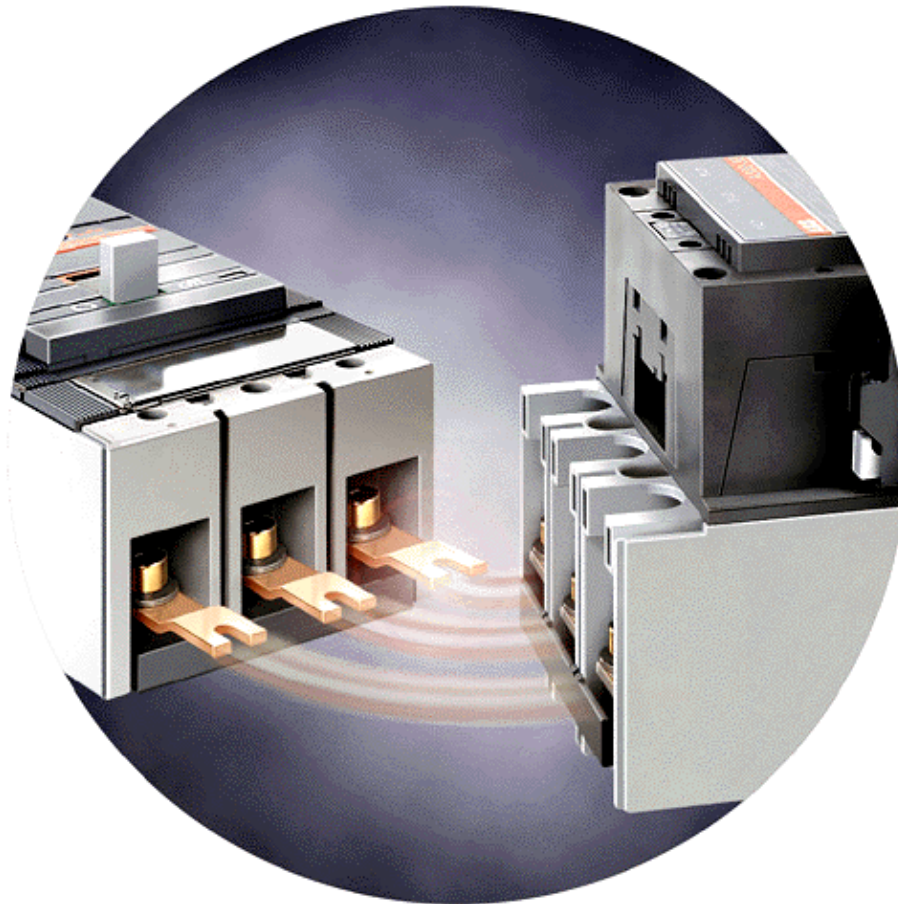


- The most compact contactor range on the market
- Low built-in depth (no safety clearance needed to door)
- Built-in terminals

**ABB Control**



## Complete system co-ordination



- **Contactors**
- **Breakers**
- **Switch fuses**
- **Electronic overload relays**
- **Thermal overload relays**

**ABB Control**

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*ABB-line - a system concept*

# Co-ordination contactors - Isomax breakers



**In line**



**Side by side**

**ABB Control**



*ABB-line - a system concept*

# Co-ordination contactors - Isomax breakers



Breaker	S3/S4	S5	S6	S7
Contactor	A145-A185	A210-A300	AF400-AF580	AF750

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# A complete motor starter solution



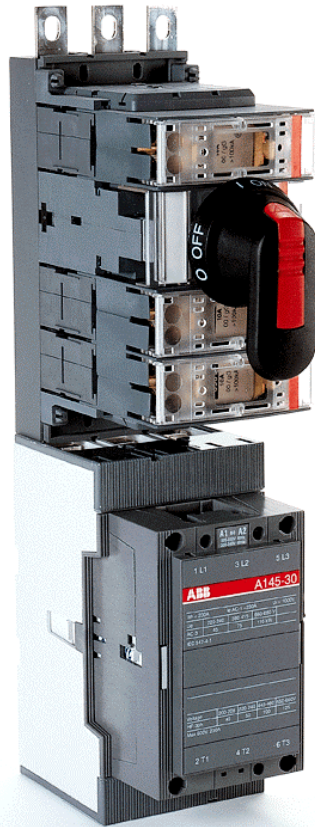
**MCCB with built-in advanced motor protection (SACE PR212/MP)**

- **Trips contactor at**
  - Overload
  - Phase loss or unbalance
  - Locked Rotor
- **Trips breaker at short circuit**

**ABB Control**

*ABB-line - a system concept*

## Co-ordination contactors - switch fuses/overload relays



**Contactor - switch fuse**



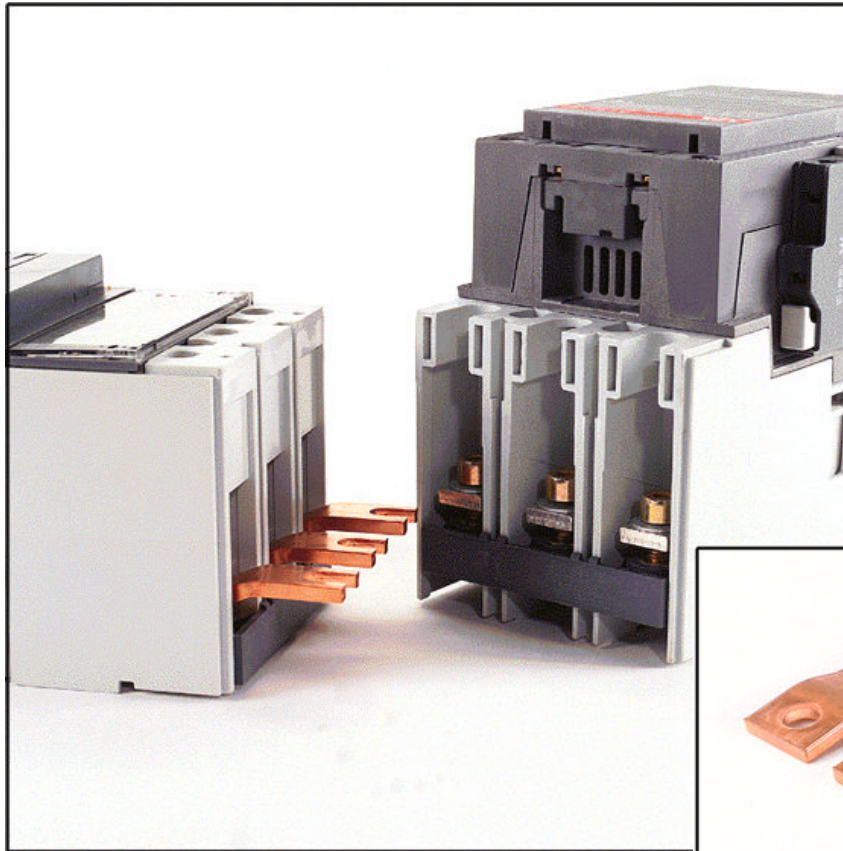
**Contactor - electronic overload relay**

**ABB Control**

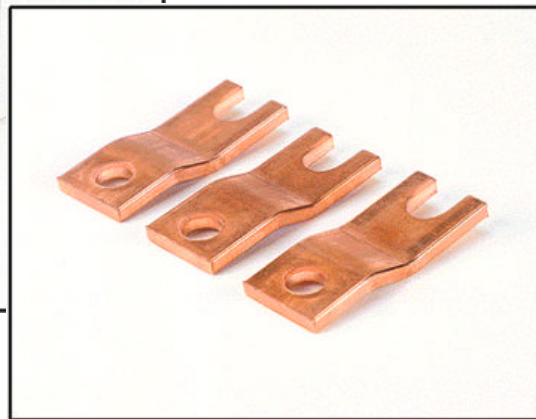


*ABB-line - a system concept*

## **ABB system provides savings**



- **Installation time**
- **Installation material**
- **Panel space**



**ABB Control**

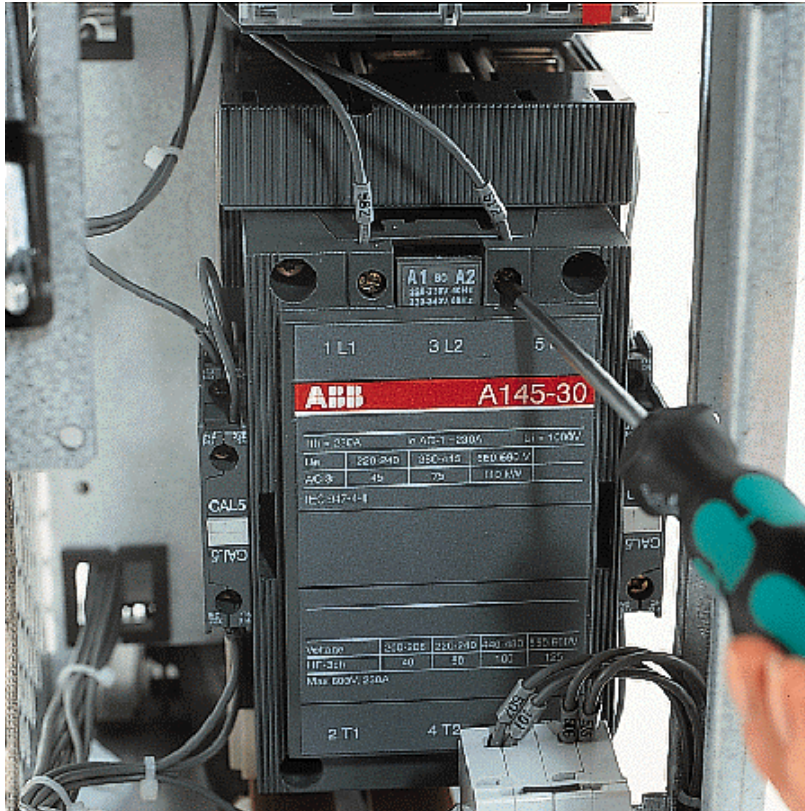
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*Easy to install*

## Easy access to auxiliary circuits



**Front access to auxiliary circuits facilitates cabling**

**ABB Control**

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*Easy to install*

## Clear indications on front



**All technical data clearly marked on the front**

**ABB Control**



*Easy to install*

# Snap-on accessories



- Snap-on surge suppressors
- Snap-on auxiliary blocks

**ABB Control**

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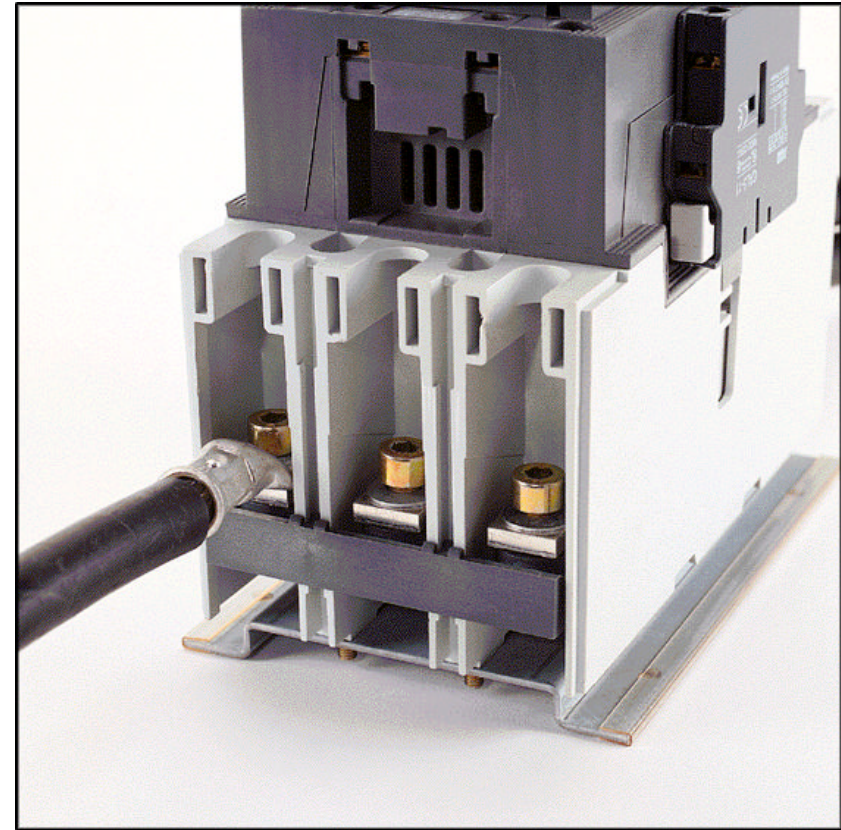




*Easy to install*

## Inserts-holder to facilitate cabling

**3-pole device to hold inserts in place while tightening the bolts**



**ABB Control**

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*Safe and simple to work with*

## A focus on safety



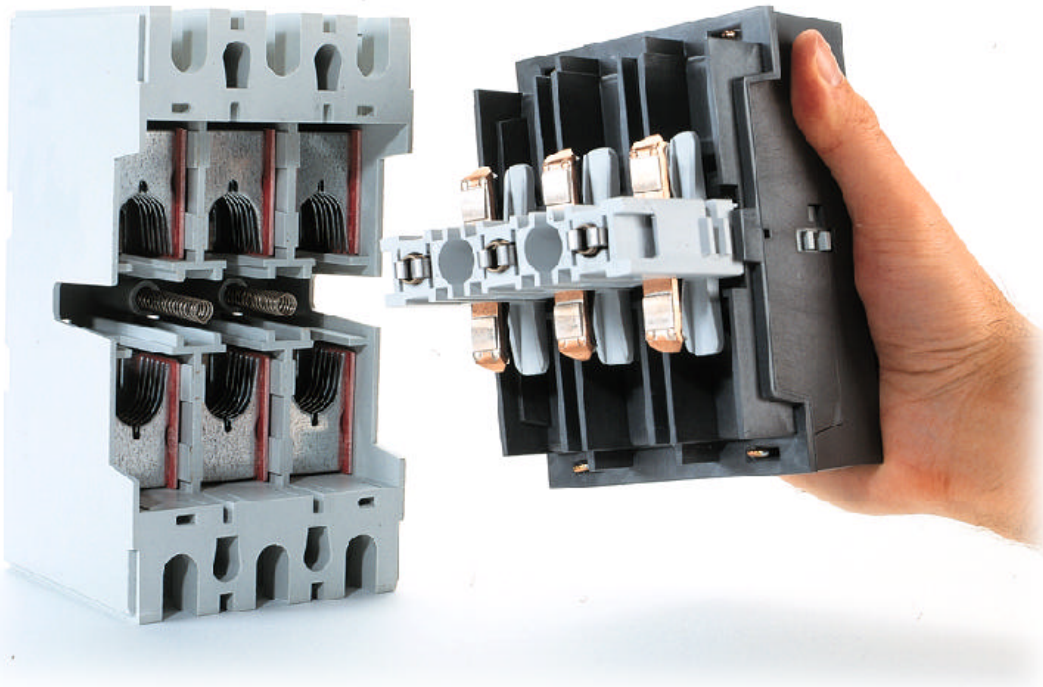
- Touch safe - IP 20 from front
- Unintentional manual operation prevented
- Clear visual indication of status
- High safety even without optional shrouds

**ABB Control**



*Safe and simple to work with*

## **Safe and easy inspection of contacts**



**Operation of the contactor  
is impossible while  
inspecting the contacts**

**ABB Control**

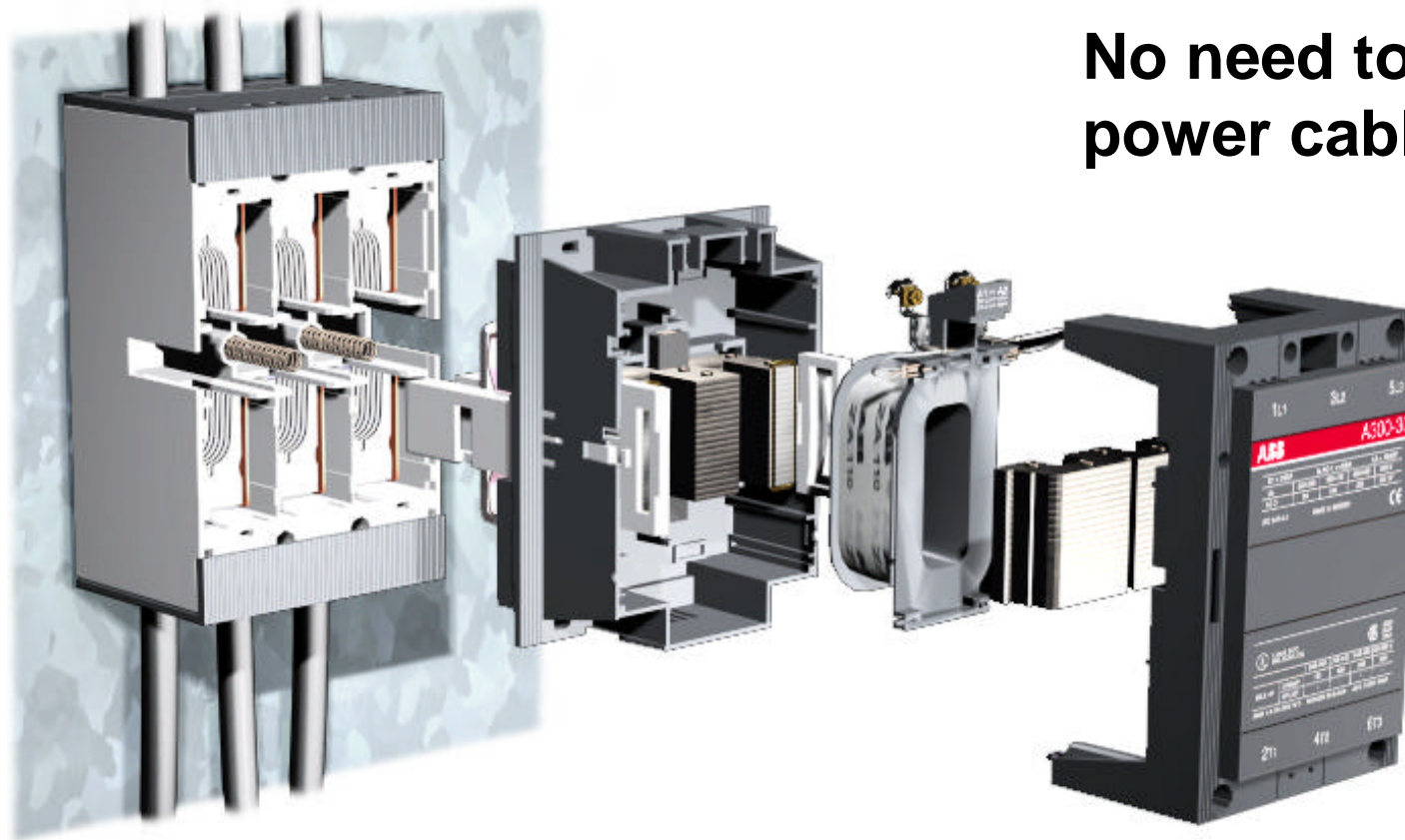
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*Safe and simple to work with*

## Easy to change coil on installed contactor



**No need to remove  
power cables**

**ABB Control**

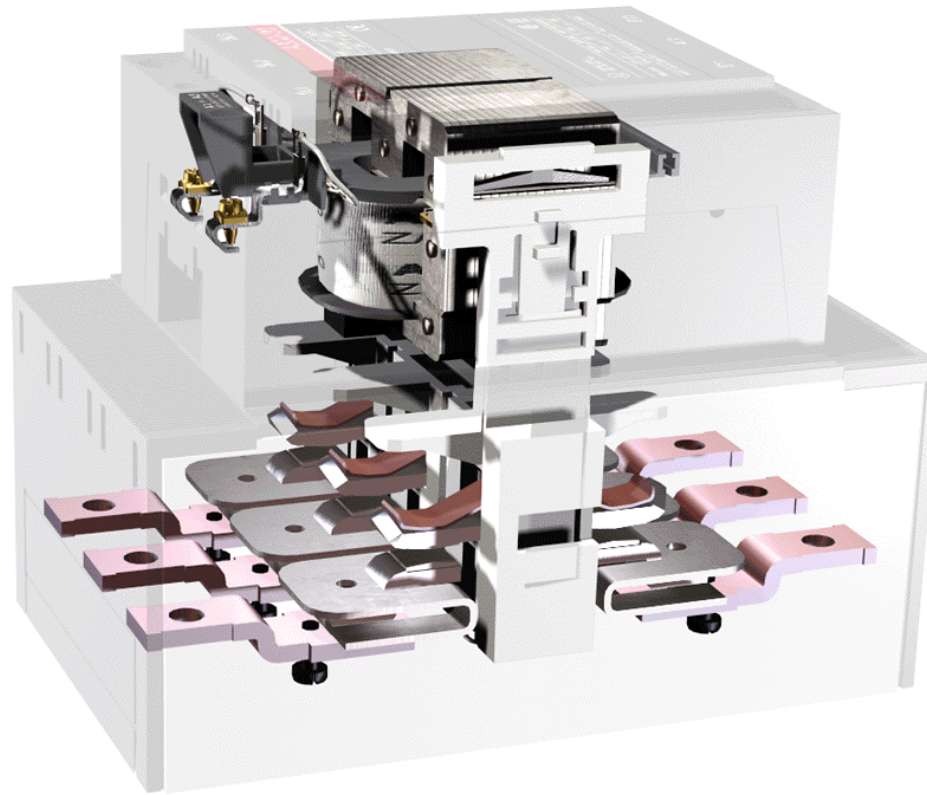
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*Improved performance*

## **Coil interface (AF contactors)**

*A new technology integrated into a  
"traditional" contactor!*



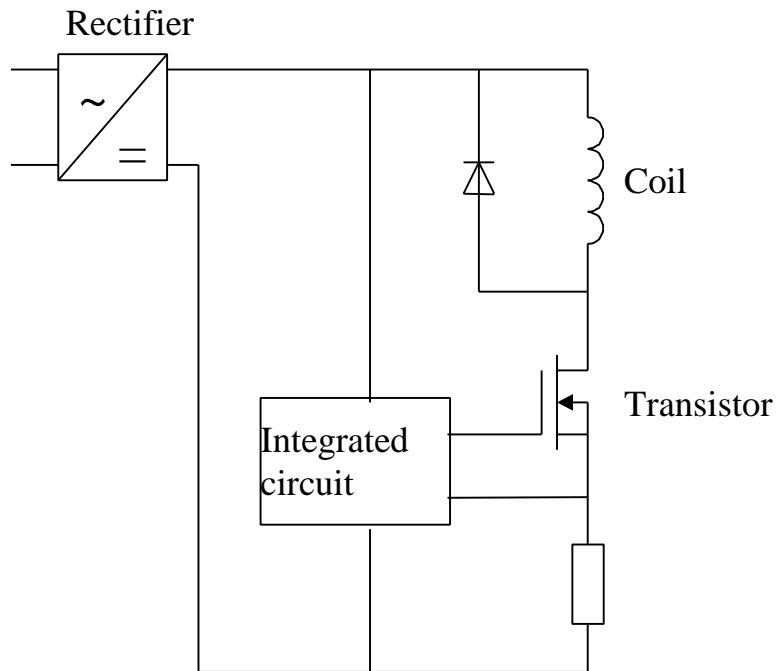
**ABB Control**

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*Improved performance*

# Electronic coil control



- Always DC current over the coil
- Controlled current levels at pull-in and holding
- Integrated circuit developed by ABB

**ABB Control**

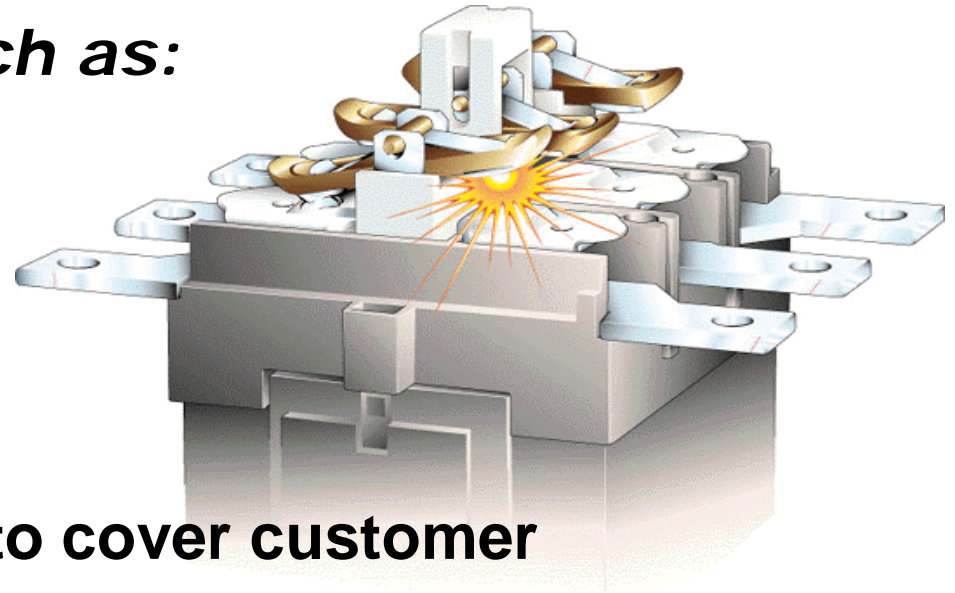
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## Coil interface

*The solution to problems such as:*

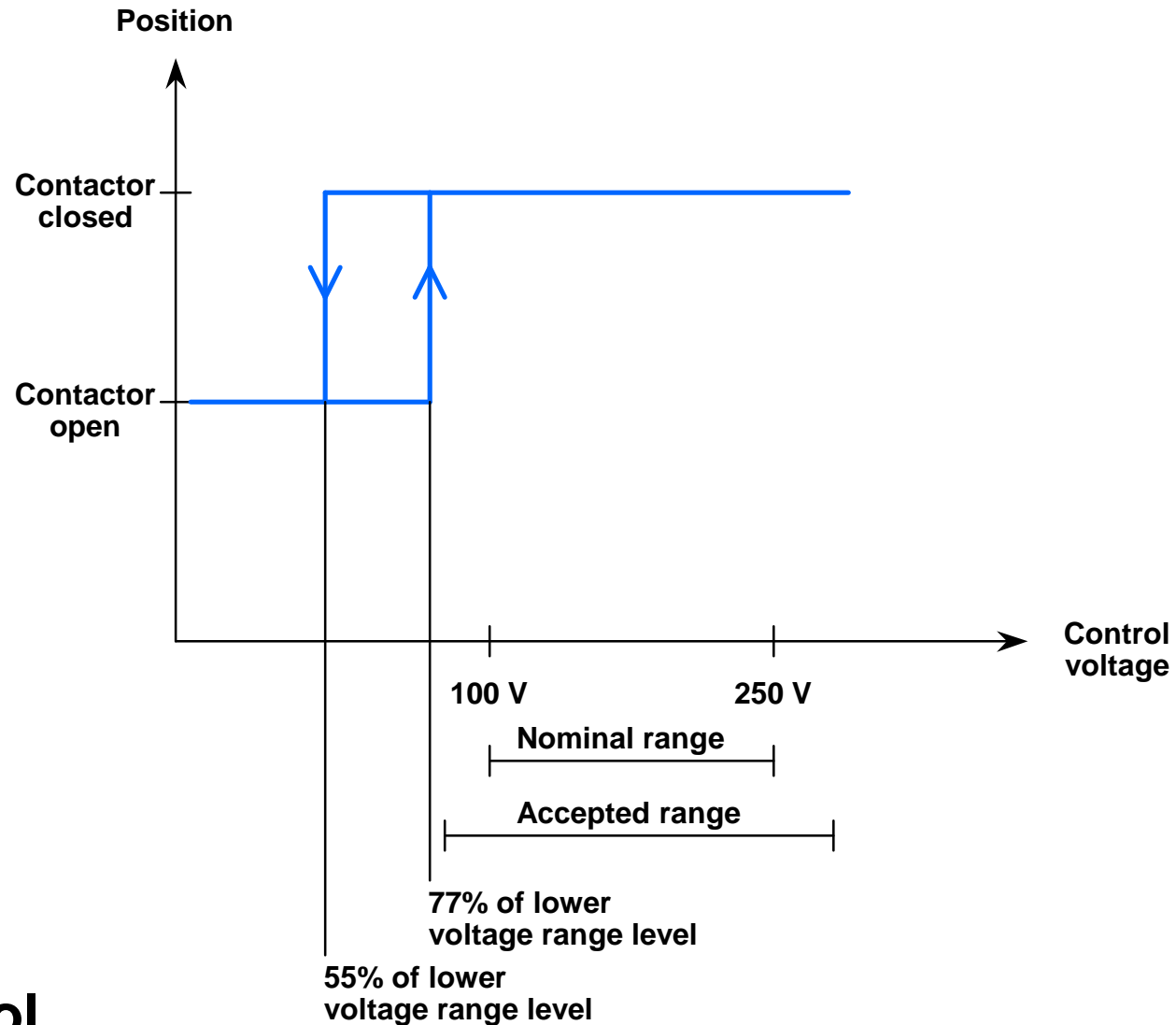
- **Sensibility to voltage variations**
  - Chattering contactors
  - Welding
  - Humming contactors
- **A wide variety of coils needed to cover customer needs**
- **High energy consumption**
- **Voltage transients at opening**





*Improved performance*

# Distinct opening and closing



**ABB Control**



*Improved performance*

## Coil voltages (AF contactors)

<b>AF145-AF300</b>	<b>20-60VDC</b>	<b>48-130VAC/DC</b>	<b>100-250VAC/DC</b>	<b>200-500VAC/DC</b>
<b>AF400-AF750</b>	<b>24-60VDC</b>	<b>48-130VAC/DC</b>	<b>100-250VAC/DC</b>	<b>200-500VAC/DC</b>

### Coil codes AF145-AF750

20...60VDC	72	(For AF145-AF300)
24...60VDC	68	(For AF400-AF750)
48...130VAC/DC	69	
100...250VAC/DC	70	
200...500VAC/DC	71	

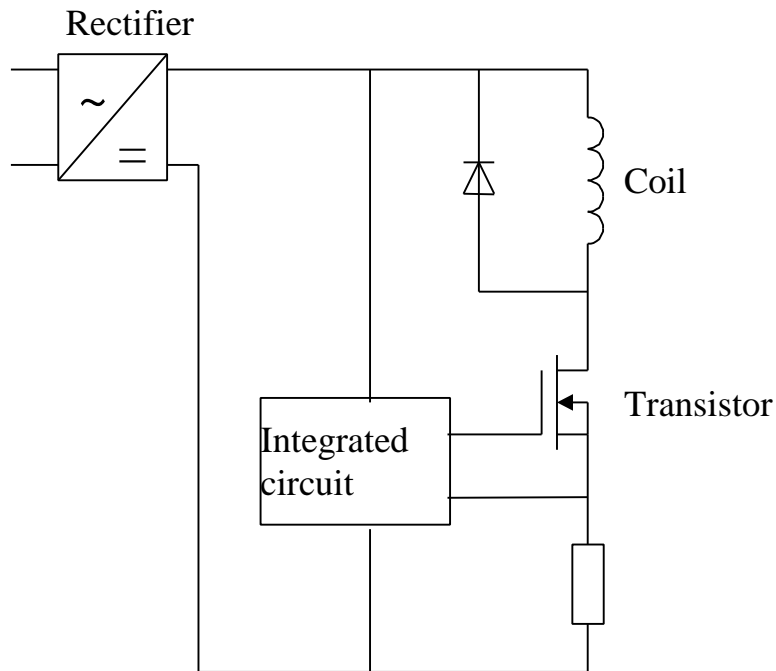
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*Improved performance*

## Reduced energy consumption



- At holding, the current through the coil is minimised
- Energy consumption reduced by 65%

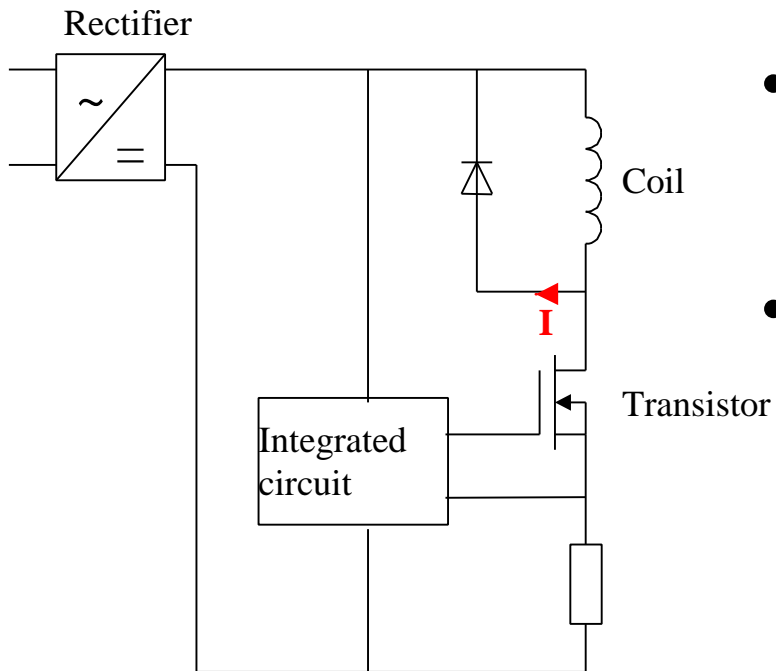
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**ABB**

## *Improved performance*

# No voltage transient at opening



- **Conventional contactors cause a voltage peak at opening which may harm surrounding electronic equipment**
- **Using a coil interface reduces the voltage peak considerably since the energy is consumed in a controlled way**

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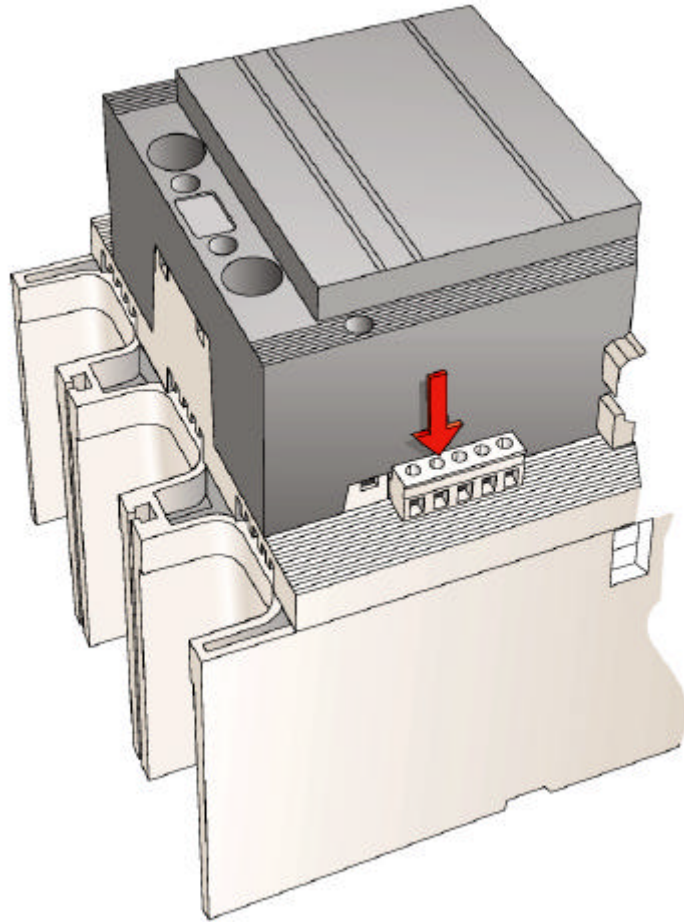
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*Improved performance*

## Low voltage signal control



**AF400-AF750 can be controlled with low voltage signals (24V DC), i.e. directly from a PLC**

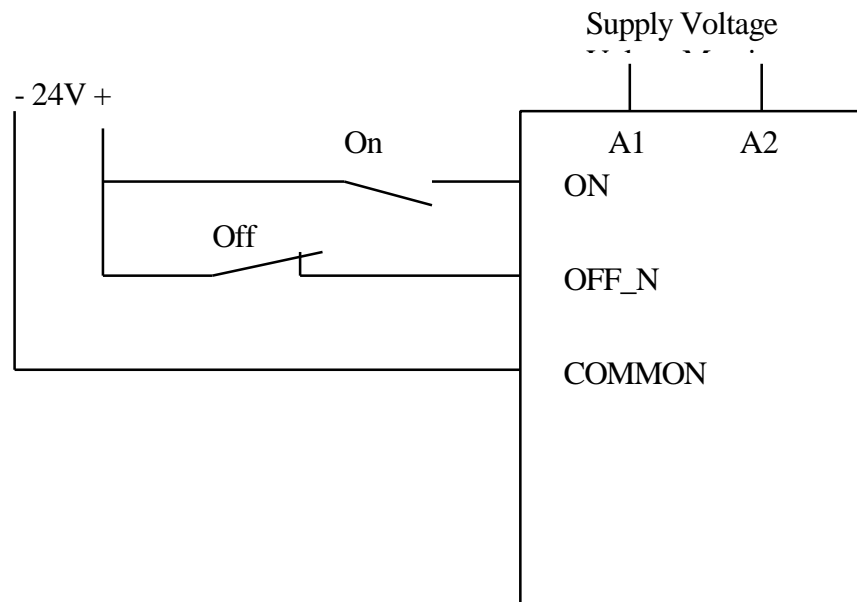
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*Improved performance*

# Low voltage signal control



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*Improved performance*

## Coil interface



- Standard on AF400-AF750
- Option on A50-A300

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*A comprehensive range of accessories*

## **A wide range of accessories**

**ABB offers a wide range of accessories to facilitate installation and use of our contactors**



**ABB Control**

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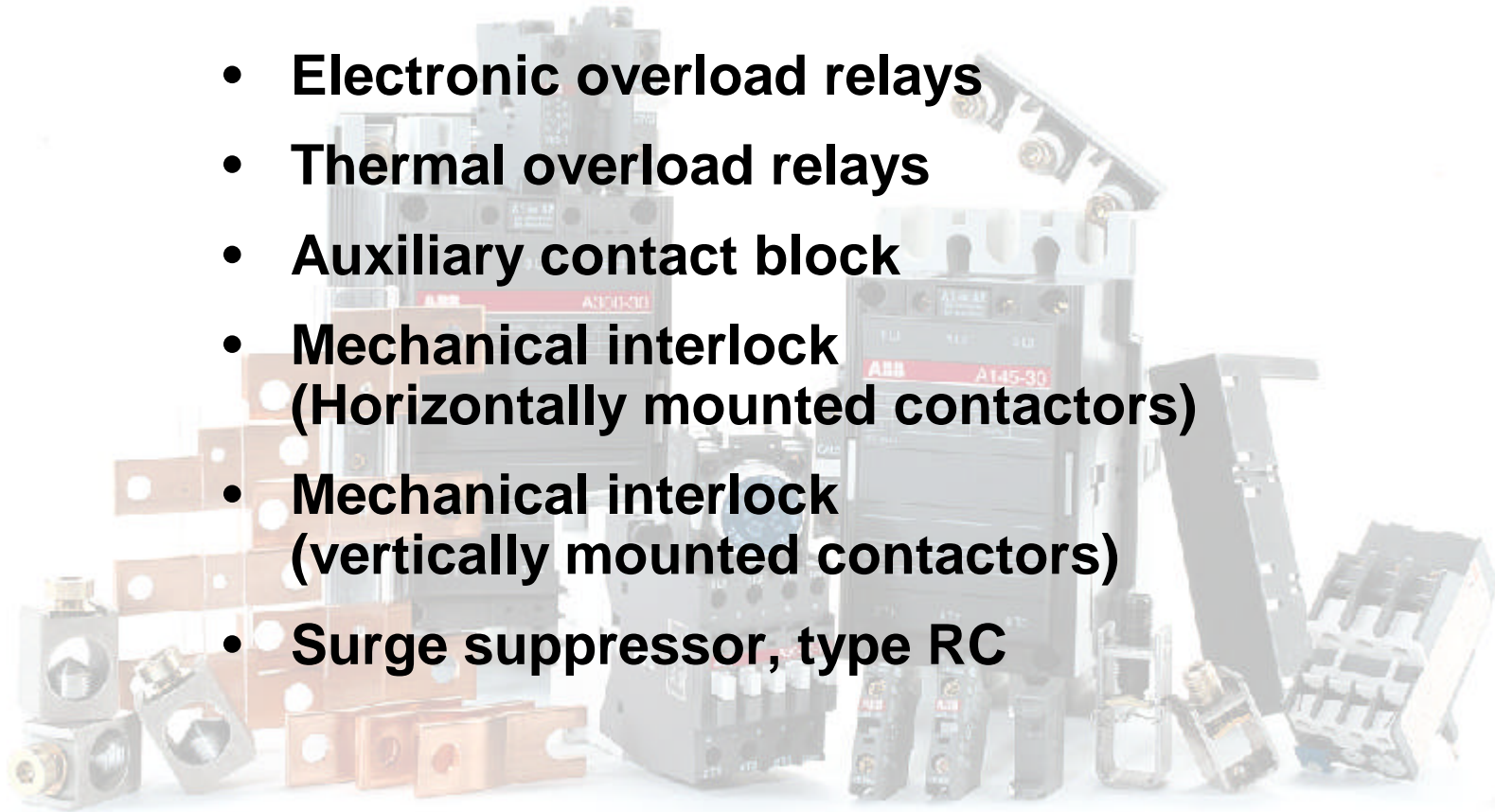




*A comprehensive range of accessories*

## Wide range of accessories

- Electronic overload relays
- Thermal overload relays
- Auxiliary contact block
- Mechanical interlock  
(Horizontally mounted contactors)
- Mechanical interlock  
(vertically mounted contactors)
- Surge suppressor, type RC



**ABB Control**

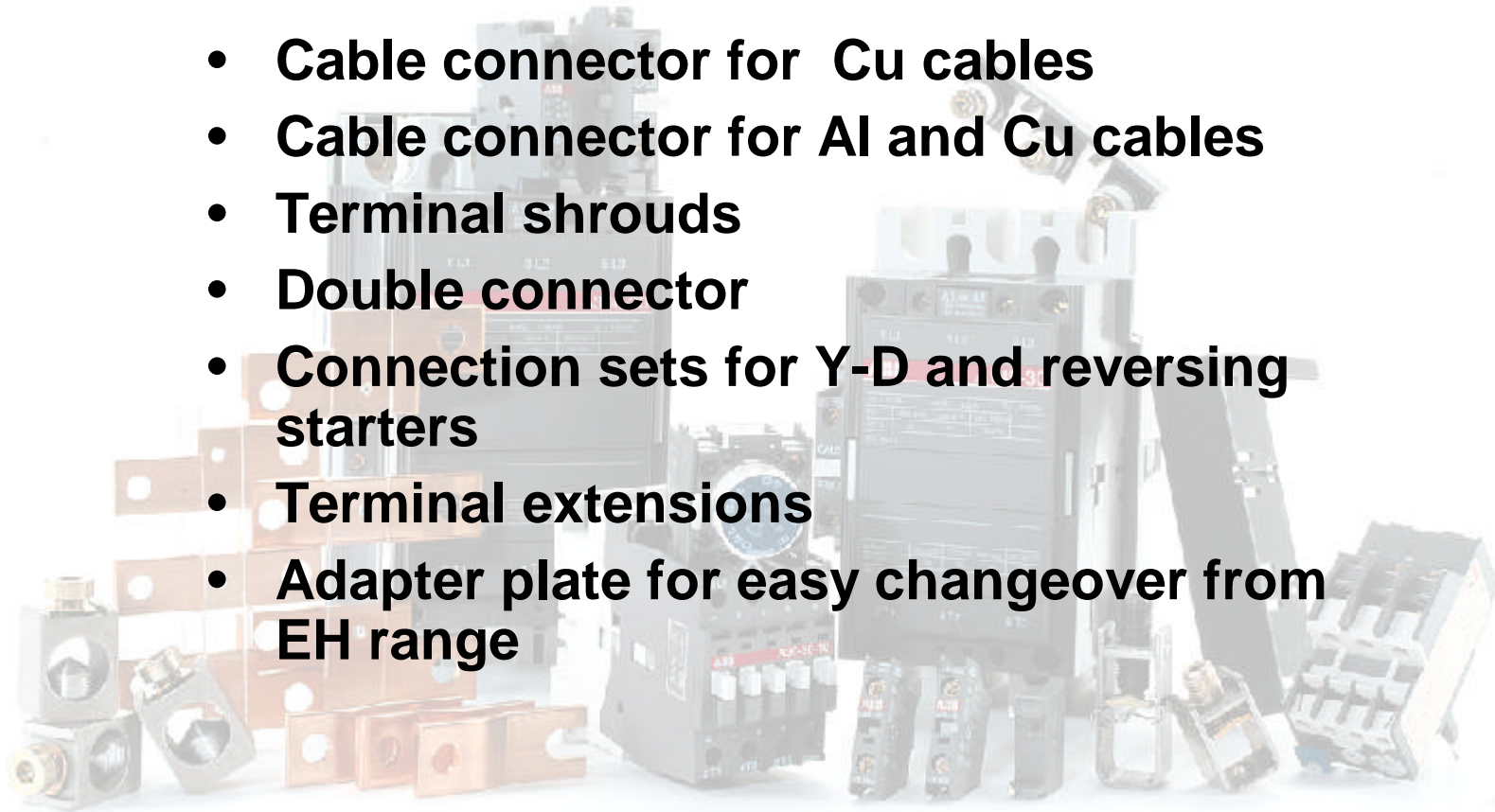
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*A comprehensive range of accessories*

## Wide range of accessories

- Cable connector for Cu cables
- Cable connector for Al and Cu cables
- Terminal shrouds
- Double connector
- Connection sets for Y-D and reversing starters
- Terminal extensions
- Adapter plate for easy changeover from EH range



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## A comprehensive range of accessories

# Contact blocks



- **Snap-on for easy mounting**
- **The same block fits the whole range**
- **Up to 4 contact blocks per contactor**
- **Wiping function improves performance**

# ABB Control

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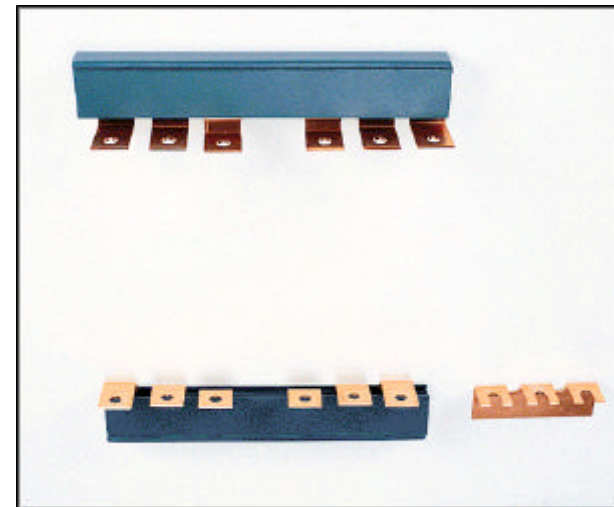


*A comprehensive range of accessories*

## Connection set for Y-D starter



- Completely protected connections
- IP20 from front



**ABB Control**

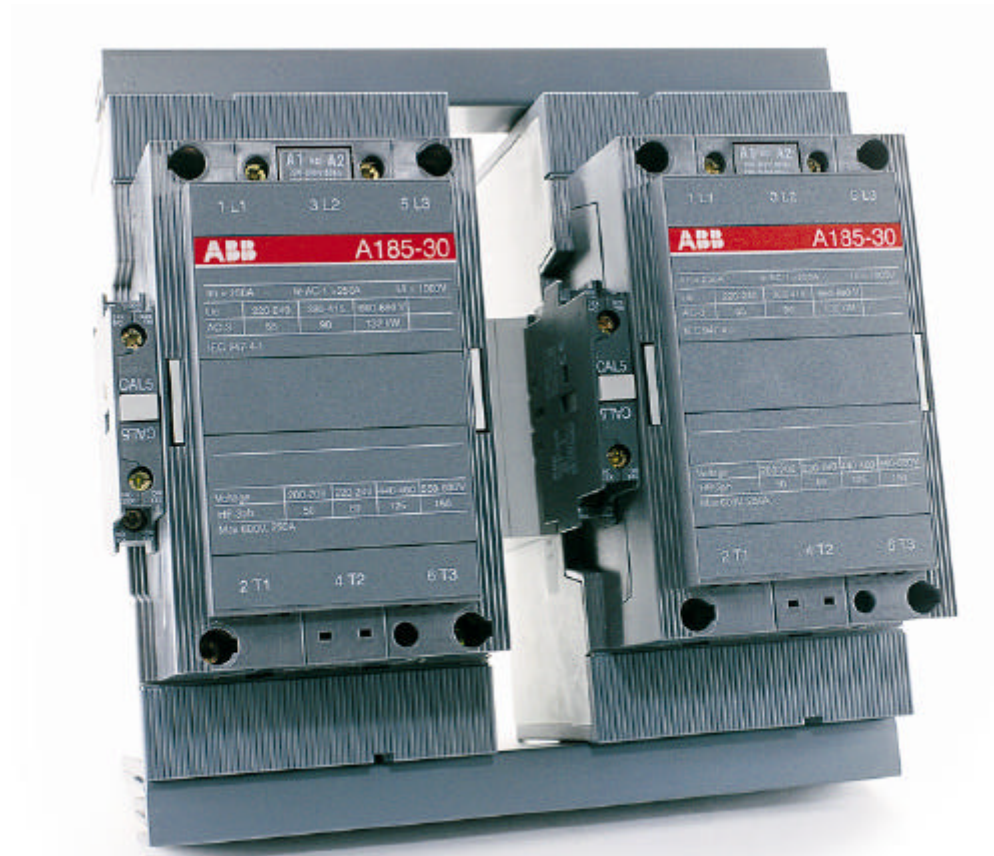
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**ABB**



*A comprehensive range of accessories*

## Connection set for reversing starter



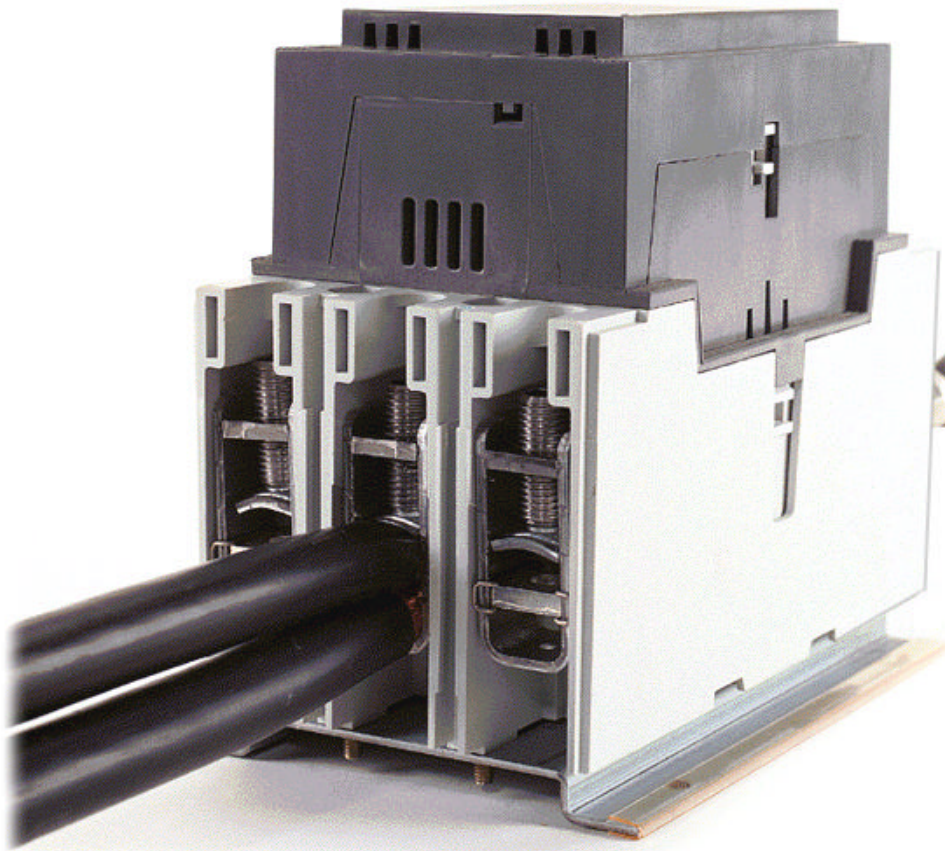
**ABB Control**

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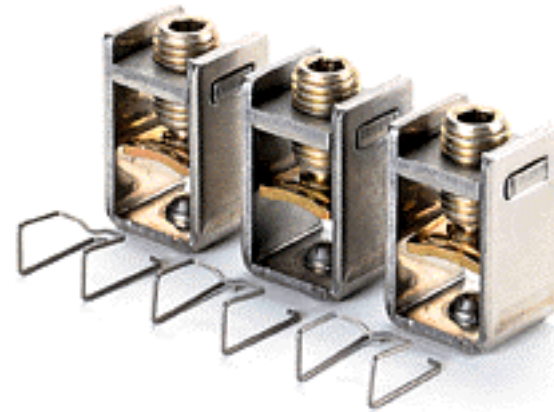


*A comprehensive range of accessories*

## Cable connectors



**Double connector**



**Single connector for  
Cu cables**

**ABB Control**

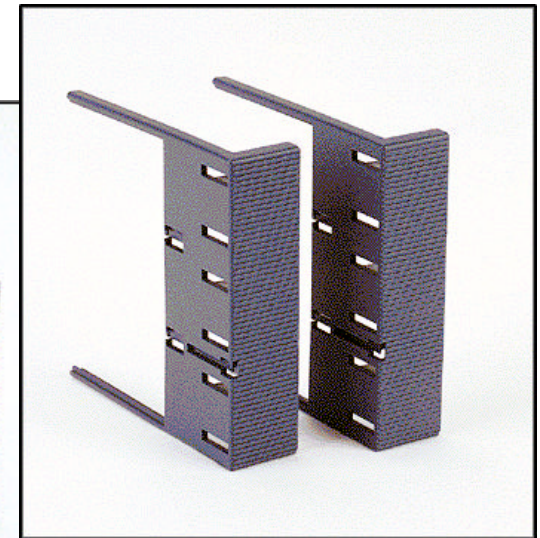
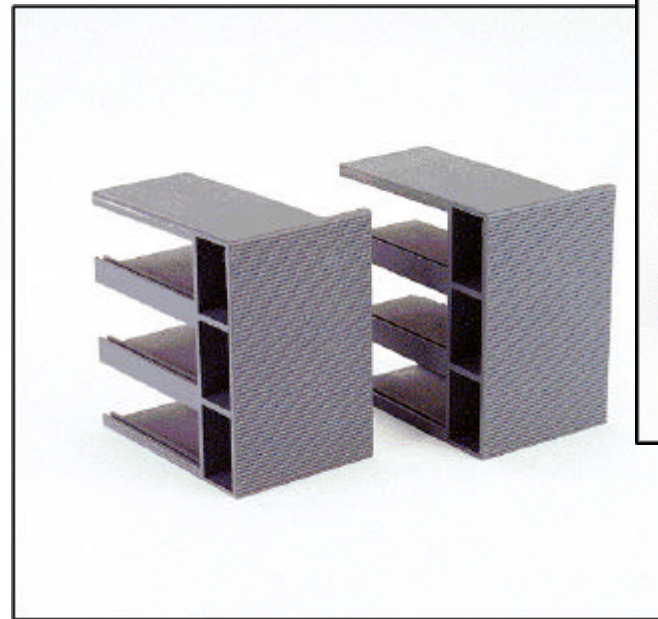
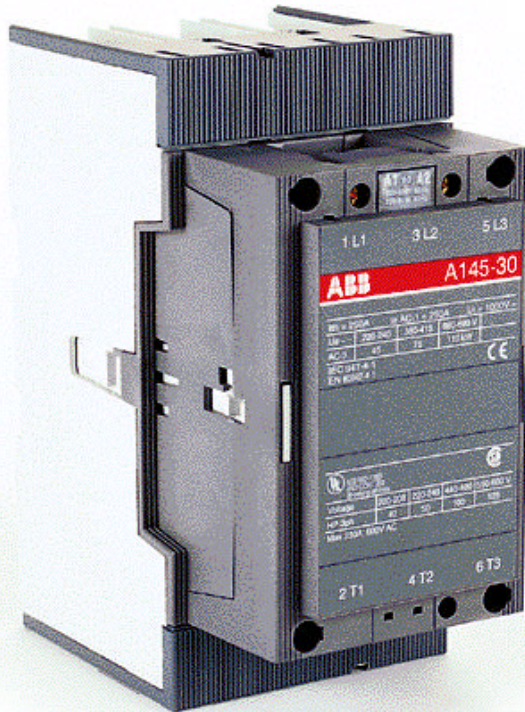
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*A comprehensive range of accessories*

## Terminal shrouds

**Easy-to-fit terminal  
shrouds for connectors  
and compression lugs**



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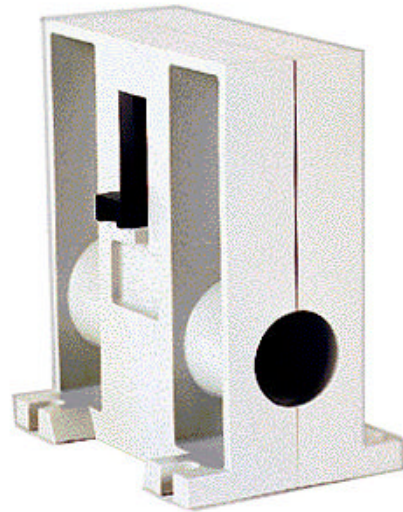
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**ABB**



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## **Mechanical interlock**



- **Vertical**
- **Horizontal**

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*A comprehensive range of accessories*

# Terminal enlargement



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*A comprehensive range of accessories*

## Conversion EH to A-range



**Adapter plate available for easier changeover from EH range to new large A-range**

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## **ABB Offer**

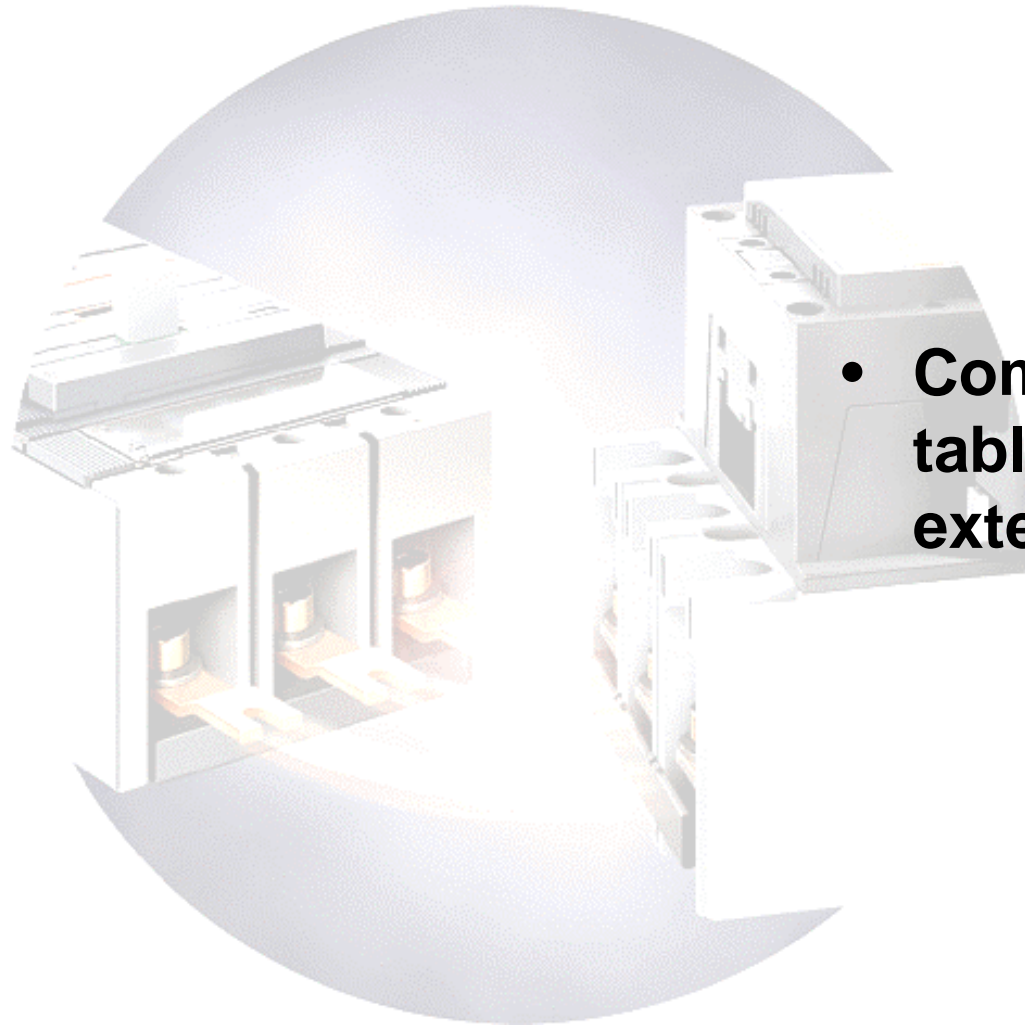


- Documentation
- Quality and environment
- Certificates and approvals
- World wide presence

**ABB Control**



# Documentation



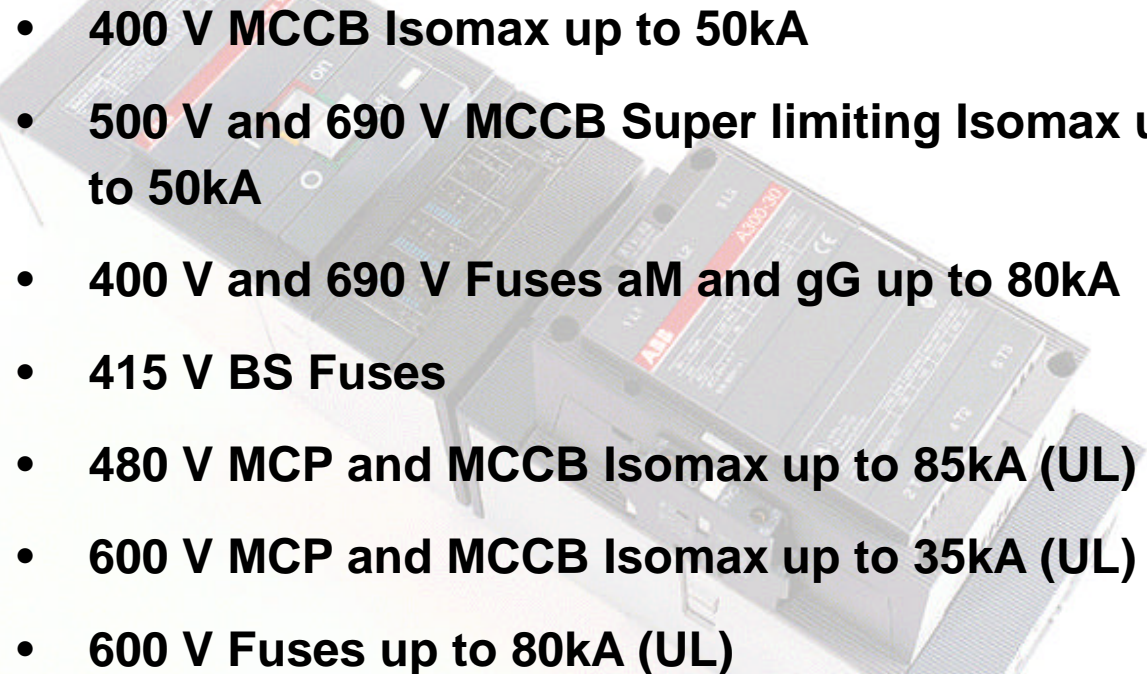
- **Complete co-ordination tables elaborated through extensive testing**

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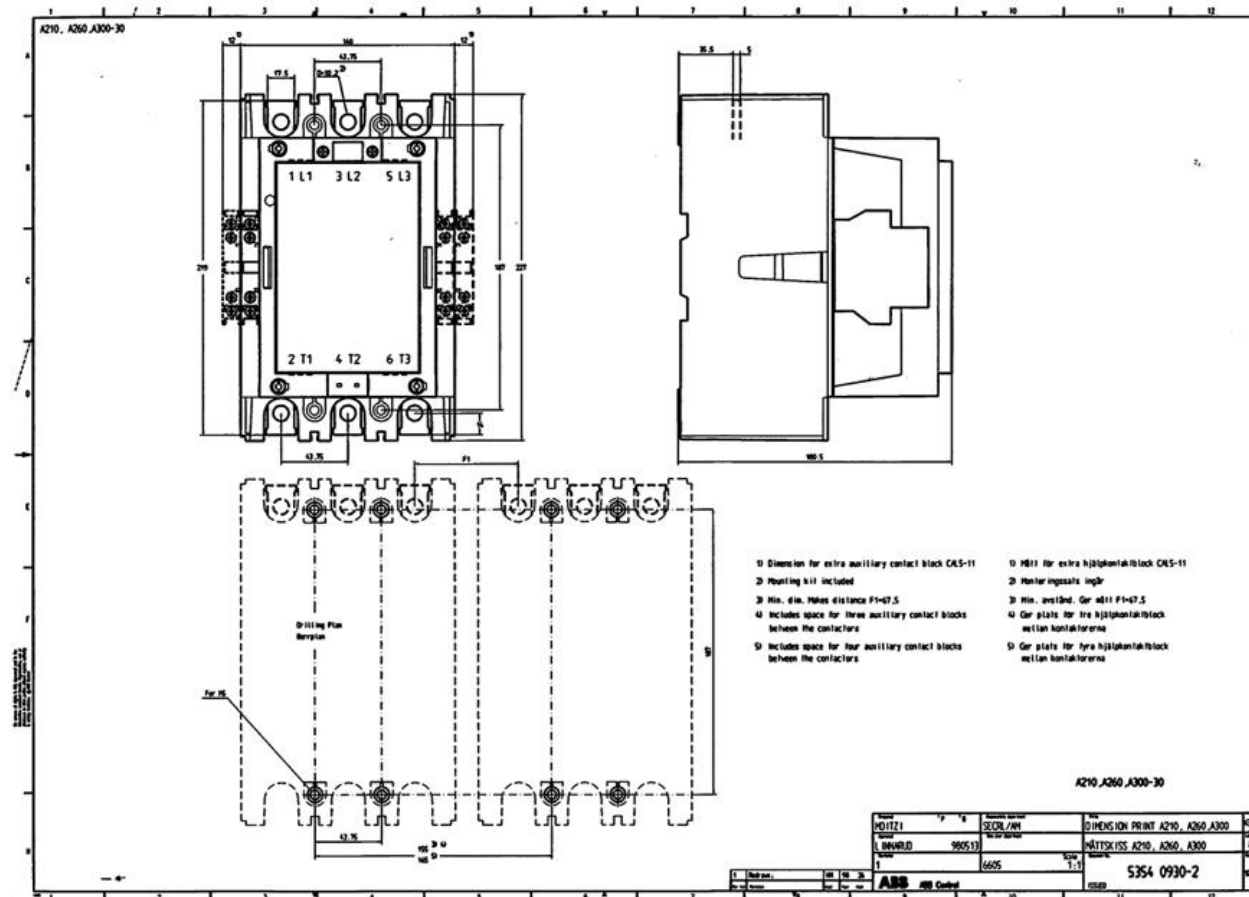
## Co-ordination tables available

- 
- 400 V MCCB Isomax up to 50kA
  - 500 V and 690 V MCCB Super limiting Isomax up to 50kA
  - 400 V and 690 V Fuses aM and gG up to 80kA
  - 415 V BS Fuses
  - 480 V MCP and MCCB Isomax up to 85kA (UL)
  - 600 V MCP and MCCB Isomax up to 35kA (UL)
  - 600 V Fuses up to 80kA (UL)



## The ABB offer

## Dimension drawings available on file (PDF, DWG and DXF format)



# ABB Control



## The ABB offer

# Quality and environment



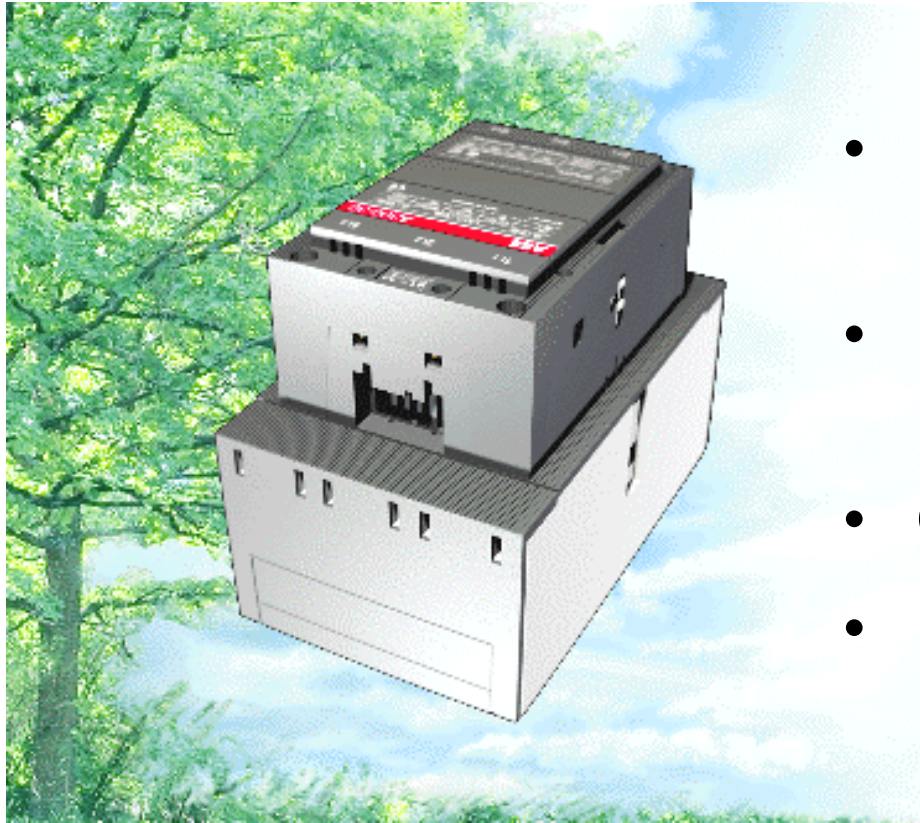
**All products made  
in ISO9001 and ISO14001  
certified factories**

## ABB Control



*The ABB offer*

## Reduced environmental impact



- Easy recycling - no combined material (metal and plastic)
- Low LCA index thanks to choice of material (in contacts and plastic)
- Cadmium and silicone free
- No ozone depleting halogens

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*The ABB offer*

# Certifications and Approvals



**ABB Control**





*The ABB offer*

## **ABB - a world wide supplier**



**ABB is represented in  
over 140 countries**

**ABB Control**

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