

Brochure

# R Contactors

Control of AC and DC power circuits  
up to 5000 A

# R contactors

## 63...5000 A ratings

**R contactors with variable number of poles and their variants (contactors with N.C. + N.O. poles, couplers...) are used for controlling power circuits up to 1000 V AC or 1500 V DC. They are designed with common standard components. With the combination of these elements and the adaptation possibilities, special versions can be provided. Designed for long-lasting operation and demanding applications, the ABB R contactors are used for many applications all over the world.**

### Flexibility of design

- Variable number of poles
- Adjustable number of auxiliary contacts
- Optional combination of N.O. and N.C. poles
- Mechanical or magnetic latching available.

### Easy maintenance

- Direct access to all the components of the contactor
- Complete and didactic instruction manual
- Spare parts available
- Dedicated service for bar contactors.

### Exceptional durability

- Mechanical durability up to 10 millions operating cycles
- Mechanical switching frequency up to 1200 cycles per hour
- Electrical durability up to 350 000 operating cycles.

### Ideal for heavy duty applications

- High making and breaking capacity
- Fully compatible with the requirements of utilization categories AC-3, DC-3 and DC-5 (control of AC / DC motors for mining, iron and steel industries...).

### Custom-made solutions

- More than 60 years' experience in dealing with customers projects
- Development of solutions from specifications
- Pre-sales support to identify and define customer requirements
- Specialists available to help you, select your product or optimize your configuration.



# R contactors

## For heavy duty applications

R contactors meet the particular requirements of each AC / DC control application up to 5000 A, where the demands are increasing:

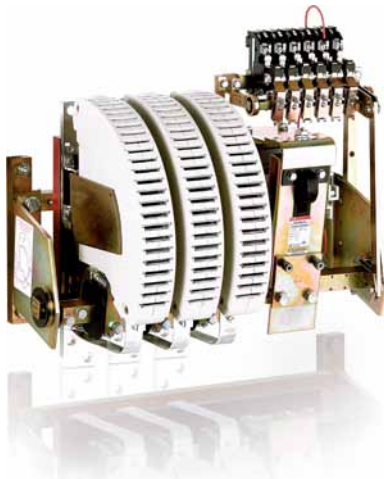
- Power distribution
- Photovoltaic, hydroelectric power stations
- Batteries
- Mining
- Railway networks and rolling stock
- Induction furnaces
- Pump stations
- Travelling cranes.



### Control your AC applications up to 5000 A

AC-1 Rated operational current up to 5000 A

AC-3 Rated power up to 1500 kW (1520 A - 440 V)



### Control your DC applications up to 5000 A

DC-1 Rated operational current up to 5000 A

DC-3 / DC-5 Rated operational current up to 2000 A  
1500 V with poles in series



### Special applications

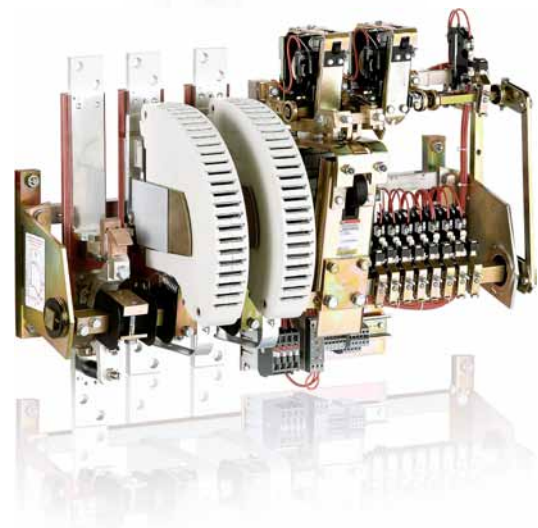
AC / DC coupling: LOR.. contactors

Slip ring motor control: FOR.. contactors

AC / DC switching (N.C. / N.O. main poles): NOR & JOR.. contactors

Latching contactors for energy saving and safety requirements: AMA or AME contactors

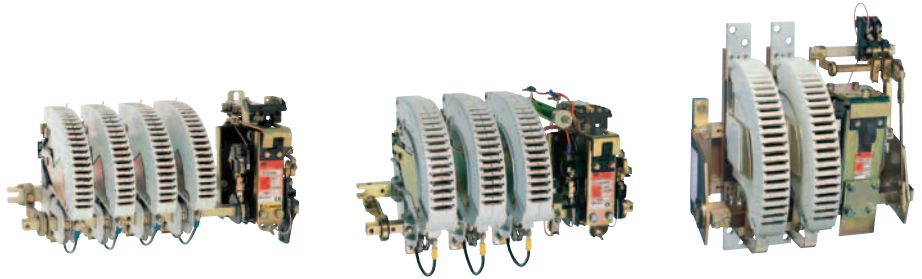
Field discharge: AM(F)-CC-JORE.. contactors



# R contactors for the AC circuits switching

Voltage  $U_e$  up to **1000 V AC**

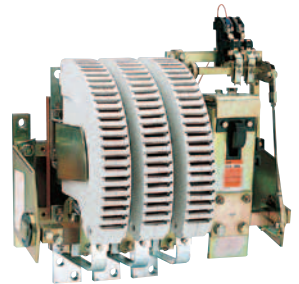
Current  $I_e$  up to **4500 A**



Contactor type	AC control circuit	~	IORR63..-MT	IORR125..-MT	IORR200..-MT	IORR400..-MT	IORR500..-MT	IORR800..-MT
	DC control circuit	≡	IORE63..-MT	IORE125..-MT	IORE200..-MT	IORE400..-MT	IORE500..-MT	IORE800..-MT
<b>Categories</b>	<b>U<sub>e</sub></b>							
<b>AC-1</b>	at 40 °C	<b>I<sub>e</sub></b>	85 A	170 A	260 A	400 A	550 A	800 A
<b>AC-3</b>	690 V AC	<b>I<sub>e</sub></b>	85 A	160 A	260 A	400 A	550 A	800 A
	1000 V AC max.	<b>I<sub>e</sub></b>	56 A	105 A	180 A	280 A	380 A	580 A
<b>AC-3</b>	690 V AC	<b>Power</b>	<b>80 kW</b>	<b>150 kW</b>	<b>240 kW</b>	<b>400 kW</b>	<b>540 kW</b>	<b>780 kW</b>

Voltage  $U_e$  up to **500 V AC**

Current  $I_e$  up to **5000 A**



Contactor type	AC control circuit	~		-	IORR800	
	DC control circuit	≡		-	IORE800	
<b>Categories</b>	<b>U<sub>e</sub></b>					
<b>AC-1</b>	at 40 °C	<b>I<sub>e</sub></b>	From 85 A to 550 A, select above IOR...-MT			900 A
<b>AC-3</b>	380-415-440 V AC	<b>I<sub>e</sub></b>	-			800 A
	500 V AC max.	<b>I<sub>e</sub></b>	-			800 A
<b>AC-3</b>	400 V AC	<b>Power</b>	-			<b>450 kW</b>

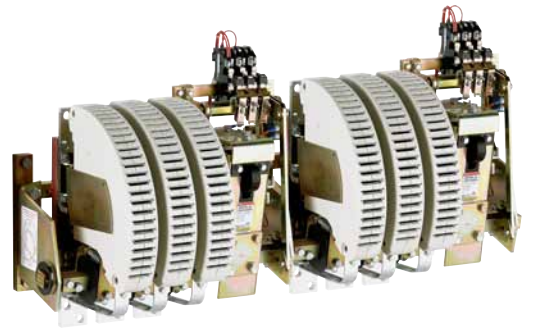
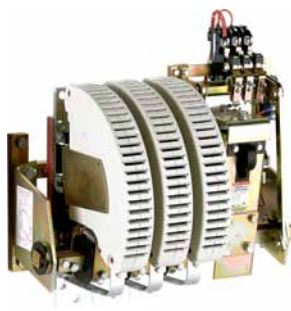
## Recap:

All contactors fulfill the IEC 60947-4-1 / EN 60947-4-1 standards.

Utilization category AC-1: max. breaking current = 1.5 x  $I_e$ ,  
max. making current = 1.5 x  $I_e$ .

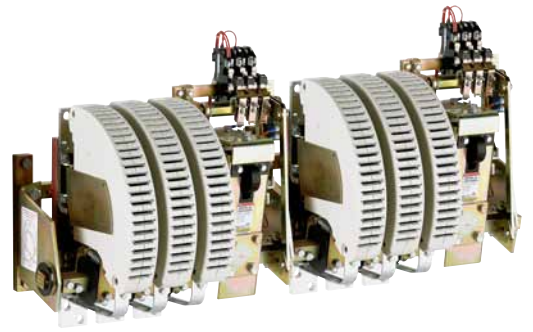
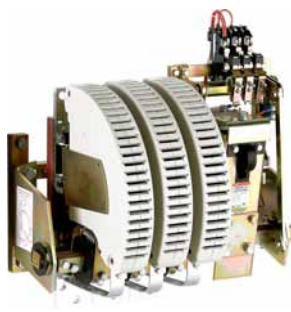
Utilization categories AC-3: max. breaking current = 8 x  $I_e$ ,  
max. making current = 10 x  $I_e$ .

Contactors with NC poles, magnetic or mechanical latching devices on request.



<a href="#">IORR1400..-MT</a>	<a href="#">IORR1700..-MT</a>	<a href="#">IORR2100..-MT</a>	<a href="#">IORR2500..-MT</a>	<a href="#">IORR3200..-MT</a>	<a href="#">IORR3800..-MT</a>	<a href="#">IORR4500..-MT</a>	<a href="#">IORR5100..-MT</a>
<a href="#">IORE1400..-MT</a>	<a href="#">IORE1700..-MT</a>	<a href="#">IORE2100..-MT</a>	<a href="#">IORE2500..-MT</a>	<a href="#">IORE3200..-MT</a>	<a href="#">IORE3800..-MT</a>	<a href="#">IORE4500..-MT</a>	<a href="#">IORE5100..-MT</a>

1250 A	1650 A	1850 A	2200 A	3000 A	3500 A	4000 A	4500 A
970 A	1170 A	1270 A	-	-	-	-	-
610 A	680 A	810 A	-	-	-	-	-
<b>1000 kW</b>	<b>1200 kW</b>	<b>1300 kW</b>	-	-	-	-	-



<a href="#">IORR1000</a>	<a href="#">IORR1400</a>	<a href="#">IORR1700</a>	<a href="#">IORR2100</a>	<a href="#">IORR2500</a>	<a href="#">IORR3200</a>	<a href="#">IORR3800</a>	<a href="#">IORR4500</a>	<a href="#">IORR5100</a>
<a href="#">IORE1000</a>	<a href="#">IORE1400</a>	<a href="#">IORE1700</a>	<a href="#">IORE2100</a>	<a href="#">IORE2500</a>	<a href="#">IORE3200</a>	<a href="#">IORE3800</a>	<a href="#">IORE4500</a>	<a href="#">IORE5100</a>

1000 A	1350 A	1650 A	2000 A	2400 A	3200 A	3800 A	4500 A	5000 A
800 A	1060 A	1260 A	1520 A	-	-	-	-	-
800 A	1080 A	1220 A	1340 A	-	-	-	-	-
<b>450 kW</b>	<b>630 kW</b>	<b>750 kW</b>	<b>900 kW</b>	-	-	-	-	-

# R contactors for the DC circuits switching

Voltage  $U_e$  up to **1500 V DC**

Current  $I_e$  up to **5000 A**



Contactor type	AC control circuit	~	IORR63..-CC	IORR125..-CC	IORR200..-CC	IORR400..-CC	IORR500..-CC
	DC control circuit	≡	IORE63..-CC	IORE125..-CC	IORE200..-CC	IORE400..-CC	IORE500..-CC
Number of poles in series*	Categories	$U_e$ max.					
1 pole	DC-1	500 V DC	Ie 85 A	170 A	275 A	400 A	550 A
	DC-3 / DC-5	500 V DC	Ie 68 A	140 A	205 A	350 A	500 A
2 poles	DC-1	1000 V DC	Ie 85 A	170 A	275 A	400 A	550 A
	DC-3 / DC-5	1000 V DC	Ie 68 A	140 A	205 A	350 A	500 A
3 poles	DC-1	1500 V DC	Ie 85 A**	170 A**	275 A**	400 A**	550 A**
	DC-3 / DC-5	1500 V DC	Ie 68 A**	140 A**	205 A**	350 A**	500 A**

\*Number of poles to be fitted in series according to the operational voltage and the utilization categories.

\*\*Version with increased insulation for 1000 V DC <  $U_e$  ≤ 1500 V DC, please consult us.

## Contactors

UL / CSA approved 

Voltage  $U_e$  up to **600 V DC**

Current  $I_e$  up to **2000 A**



Contactor type	AC control circuit	~	IORR800-10-CC	IORR1000-10-CC	IORR1400-10-CC	IORR1700-10-CC	IORR2100-10-CC
	DC control circuit	≡	IORE800-10-CC	IORE1000-10-CC	IORE1400-10-CC	IORE1700-10-CC	IORE2100-10-CC
		$U$ max.					
1 pole	General use	600 V DC	Ie 800 A	1000 A	1300 A	1700 A	2000 A

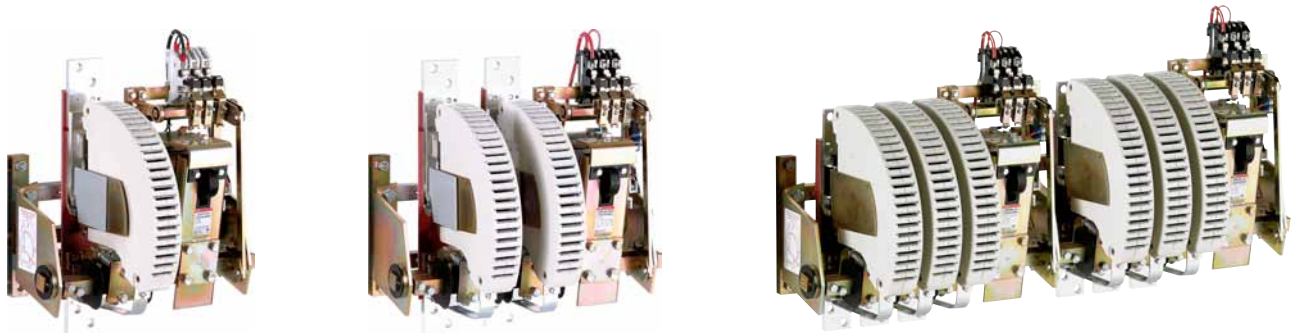
### Recap:

All contactors fulfill the IEC 60947-4-1 / EN 60947-4-1 standards.

Utilization category DC-1: max. breaking current = 1.5 x  $I_e$ ,  
max. making current = 1.5 x  $I_e$ .

Utilization categories DC-3 / DC-5: max. breaking current = 4 x  $I_e$ ,  
max. making current = 4 x  $I_e$ .

Contactors with NC poles, magnetic or mechanical latching devices on request.



[IORR800.-CC](#) [IORR1000.-CC](#) [IORR1400.-CC](#) [IORR1700.-CC](#) [IORR2100.-CC](#) [IORR2500.-CC](#) [IORR3200.-CC](#) [IORR3800.-CC](#) [IORR4500.-CC](#) [IORR5100.-CC](#)  
[IORE800.-CC](#) [IORE1000.-CC](#) [IORE1400.-CC](#) [IORE1700.-CC](#) [IORE2100.-CC](#) [IORE2500.-CC](#) [IORE3200.-CC](#) [IORE3800.-CC](#) [IORE4500.-CC](#) [IORE5100.-CC](#)

Ue max.	IORR800.-CC	IORR1000.-CC	IORR1400.-CC	IORR1700.-CC	IORR2100.-CC	IORR2500.-CC	IORR3200.-CC	IORR3800.-CC	IORR4500.-CC	IORR5100.-CC
750 V DC	800 A	1000 A	1250 A	1600 A	2000 A	2300 A	3200 A	3800 A	4500 A	5000 A
600 V DC	720 A	1000 A	1250 A	1600 A	2000 A	On request	On request	On request	On request	On request
1500 V DC	800 A	1000 A	1250 A	1600 A	2000 A	2300 A	3200 A	3800 A	4500 A	5000 A
1000 V DC	720 A	1000 A	1250 A	1600 A	2000 A	On request	On request	On request	On request	On request
1500 V DC	800 A	1000 A	1250 A	1600 A	2000 A	2300 A	3200 A	3800 A	4500 A	5000 A
1500 V DC	720 A	1000 A	1250 A	1600 A	2000 A	On request	On request	On request	On request	On request

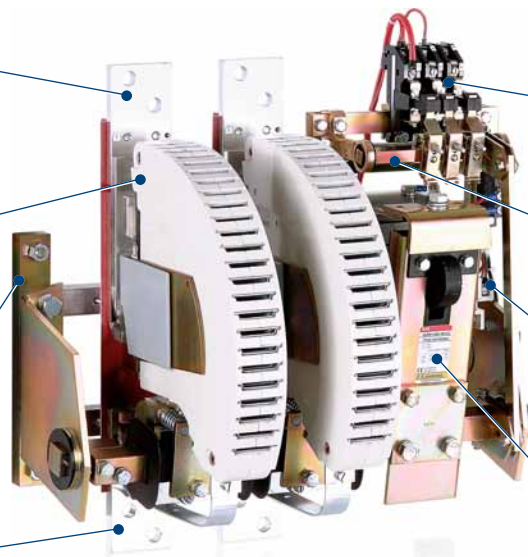
## Product overview

Upper terminal plate for power circuit (network)

2 N.O. main poles with arc chutes

Main frame for contactor fixing

Lower terminal plate for power circuit (utilization)



CA15.. auxiliary contacts  
1 N.O. + 1 N.C. fitted as standard (extra auxiliary contacts on request)

Auxiliary frame for auxiliary contacts

Connecting terminals for coil supply

Electro-magnet (RR type), laminated magnetic circuit, AC coil, direct supply

# Questionnaire

## Specification for R contactors

Customer .....  
 Contact person ..... Date .....  
 Tel. .... e-mail .....

ABB .....  
 Contact person .....  
 Tel. ....

Quantity ..... Requested delivery date .....  
 Project / Application .....

### Power circuit

#### AC switching

Application type  
 AC-1 (resistive load)  
 AC-3 (direct starting, switching off running motors)  
 No load breaking  
 Other .....

Number of poles: N.O. .... N.C. ....  
 Rated operational current  $I_e$  ..... A  
 Max. making current ..... A  
 Max. breaking current ..... A  
 Rated operational voltage  $U_e$  ..... V ..... Hz

or

#### DC switching

Application type  
 DC-1 (resistive load)  
 DC-3 (shunt motors)  
 DC-5 (series motors)  
 No load breaking  
 Other ..... L/R ..... ms

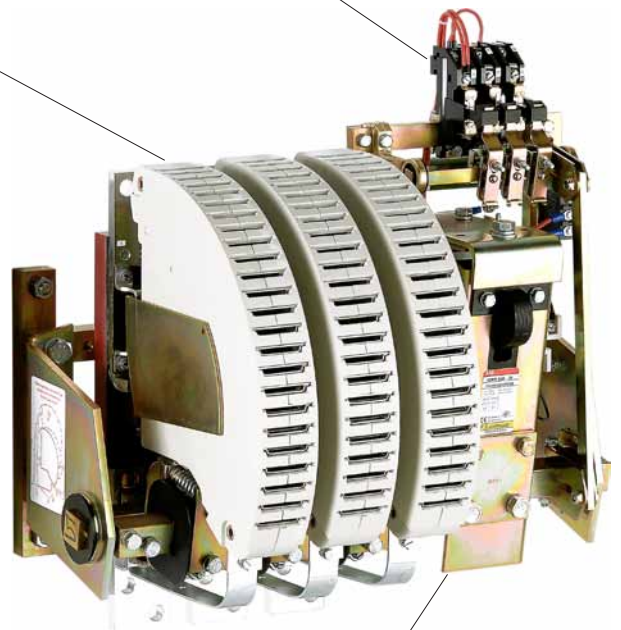
Number of poles: N.O. .... N.C. ....  
 Rated operational current  $I_e$  ..... A  
 Making current ..... A  
 Breaking current min. .... A max. .... A  
 Rated operational voltage  $U_e$  ..... V DC

### Operating conditions

Switching frequency ..... cycles/h  
 Mech. durability required (millions of operating cycles) .....  
 Remarks .....

### Auxiliary contacts

Number of N.O. auxiliary contacts .....  
 Number of N.C. auxiliary contacts .....



### Control circuit (coil)

AC  Voltage ..... V ..... Hz  
 DC  Voltage ..... V DC

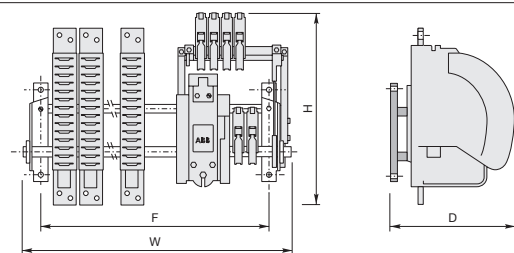
**Options**  
 Magnetical latching  
 Mechanical latching

### Accessories

Please add any other useful documents for further information e.g. technical specification, drawing, wiring diagram, etc.

### Replacement of an existing contactor

Brand .....  
 Type .....  
 Fixing dimension F = ..... mm  
 Overall dimensions W = ..... mm  
 H = ..... mm  
 D = ..... mm



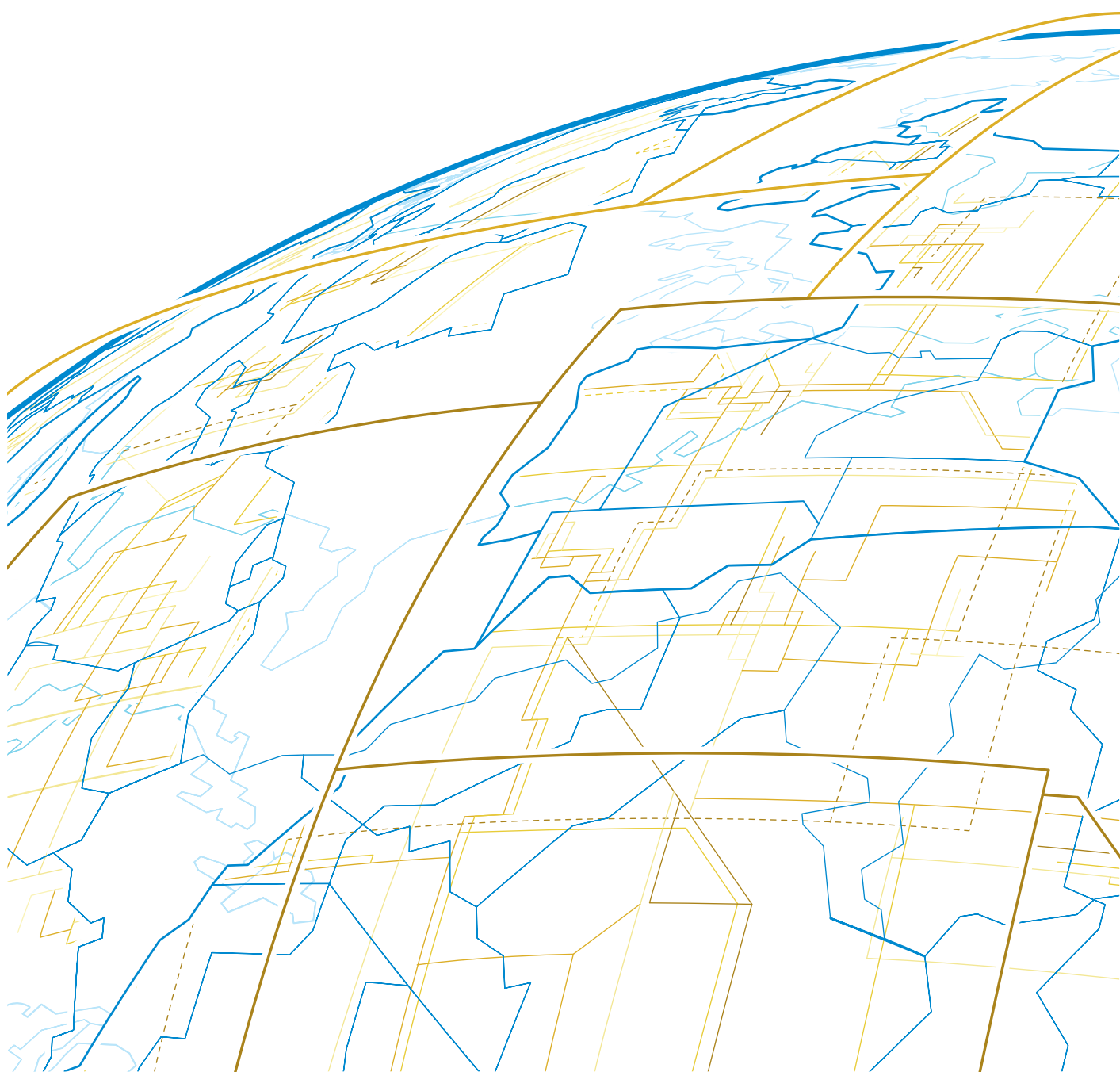
Please photocopy and forward. Questionnaire also available on the ABB Website:

[www.abb.com/lowvoltage](http://www.abb.com/lowvoltage) Section: Our offering Select: Control Products > Contactors > Bar mounted contactors





You can find the address of your local sales organisation  
on the ABB home page  
<http://www.abb.com/contacts> -> Low Voltage products





# Contact us

**ABB France**  
**Low Voltage Products Division**  
10, rue Ampère Z.I. - B.P. 114  
F-69685 Chassieu cedex / France

## **Note**

We reserve the right to make technical changes or modify the contents of this document without prior notice. With regard to purchase orders, the agreed particulars shall prevail. ABB does not accept any responsibility whatsoever for potential errors or possible lack of information in this document.

We reserve all rights in this document and in the subject matter and illustrations contained therein. Any reproduction, disclosure to third parties or utilization of its contents – in whole or in parts – is forbidden without prior written consent of ABB.

Copyright© 2012 ABB. All rights reserved