



# Mini contactors Overview and applications

# Mini contactors

## Overview, features and benefits

### Success story

Mini contactors from ABB are ideally suited for applications where space is at a premium. They are the flattest on market and therefore can be used in special modular and compact applications.

The small dimensions, a wide range of coil supplies and a variety of versions within the model range provide customers with high flexibility in use for applications up to 20 A resistive loads and motor loads up to 5.5 kW.

### The family:

- Standard types with screw, flat pin plug or soldering pin connection
- Compact reversing types with safe blocking system (screws, flat pin plugs and soldering pins)
- PLC interface types with very low power consumption
- Wide range supply types for railway / batterie applications

- Mini contactor relays for auxiliary circuit switching (screws, flat plugs and soldering pins)

### Features:

- Very compact, flat design
- Easy and quick mounting in any position
- Compact reversing contactor as one module, including blocking function
- Low power consumption
- Positive linked and guided contacts
- Hum-free operating DC coil

### Benefits:

- Space saving dimensions
- Flexible use in any position
- Energy and cost saving
- Safe and reliable switching functions
- No noise in operation due to the hum-free coil

### Applications:

- Entrance gates
- Blinds
- Coffee machines
- Washing machines
- Sawing machines
- Industrial door control
- PCB board
- Air conditioning
- Cooling systems for food
- Heatings
- Vending machines
- Water heaters
- Pump stations
- Railway applications
- Household applications
- Shutters
- Garage door controls
- Boat industries
- Conveyor systems
- Elevators
- Escalators



### So small – so powerful

Due to the very flat design mini contactors are suitable for compact single applications as well as for motor starters in small enclosures.

### High quality product

Each product is tested in the fully automatic production line, which is certified according to ISO 9001 and ISO 14000. This guarantees a constant high quality standard.

In modern laboratories, a variety of tests are done to achieve the conditions for global standards. Therefore, many certificates are available.



Switching of heatings (AC-1)	B6xx	B7xx
Rated operational current I <sub>o</sub>	20 A	20 A
Rated operational power		
230 V AC 3 ~	6.4 kW	8.0 kW
400 V AC 3 ~	11.0 kW	13.8 kW
Switching of motors (AC-3)		
Rated operational current I <sub>o</sub>	9 A	12 A
Rated operational power		
230 V AC 3 ~	2.2 kW	3.0 kW
400 V AC 3 ~	4.0 kW	5.5 kW



### Examples for single products and motor starters



Mini contactor

Compact reversing contactor



Thermal overload relay with separate mounting kit

Mini starter with thermal overload relay

Compact starter

# Mini contactors



				Screw terminals			
<b>AC Control supply</b>							
<b>3-pole contactors</b>		Coil consumption 3.5 W	Type	<b>B6</b>	<b>B7</b>	-	-
<b>3-pole reversing contactors</b>		Coil consumption 3.5 W	Type	-	-	<b>VB6</b> <b>VB6A (2)</b>	<b>VB7</b> <b>VB7A (2)</b>
<b>4-pole contactors</b>		Coil consumption 3.5 W	Type	<b>B6</b>	<b>B7</b>	-	-
<b>DC Control supply</b>							
<b>3-pole contactors</b>		Coil consumption 3.5 W	Type	<b>BC6</b>	<b>BC7</b> <b>B7D (1)</b>	-	-
<b>3-pole interface contactors</b>		Coil consumption 1.4 ... 2.4 W	Type	<b>BC6</b>	<b>BC7</b>	-	-
<b>3-pole reversing contactors</b>		Coil consumption 3.5 W	Type	-	-	<b>VBC6</b> <b>VBC6A (2)</b>	<b>VBC7</b> <b>VBC7A (2)</b>
<b>4-pole contactors</b>		Coil consumption 3.5 W	Type	<b>BC6</b>	<b>B7D</b>	-	-
<b>Wide range types</b>		Extended coil voltage and temperature	Type	-	<b>TBC7</b>	-	-
<b>PLC types</b>		Coil consumption 1.7 W	Type	<b>B6S (1)</b>	<b>B7S (1)</b>	-	-
<b>IEC</b>	<b>Rated operational power AC-3</b>	220-230-240 V	kW	2.2	3	2.2	3
		380-400 V	kW	4	5.5	4	5.5
	<b>Rated operational current AC-1</b>	400 V, $\theta \leq 40^\circ\text{C}$	A	20	20	20	20
<b>UL/CSA</b>	<b>3-phase motor rating</b>	220-240 V AC	hp	2	3	2	3
		440-480 V AC	hp	3	5	3	5
	<b>General use rating</b>		A	12 (300 V)	16 (600 V)	12 (300 V)	16 (600 V)

(1) With integrated surge suppressor  
(2) With safety blocking function

## Main accessories

<b>Auxiliary contact blocks</b>	Front mounting	CAF6
	Side mounting	CA6
<b>Connection sets</b>	For reversing contactors	BSM6-30
<b>Surge suppressors</b>	Varistor (AC/DC)	RV-BC6

## Overload relays



<b>Thermal overload relays</b>	Class 10	T16
Thermal and phase failure protection, with single setup possible		
<b>Electronic overload relays</b>	Class 10E, 20E, 30E	E16DU
With single setup possible		

## Manual motor starters

Thermal / magnetic protection	Class 10	MS116, MS132
Magnetic only types		MO132
Connecting link to manual motor starters		BEA7/132

# Contactors relays



				Screw terminals			
<b>AC Control supply</b>							
<b>4-pole contactor relays</b>		Coil consumption 3.5 W	Type	<b>K6</b>			
<b>DC Control supply</b>							
<b>4-pole contactor relays</b>		Coil consumption 3.5 W	Type	<b>KC6</b>			
<b>4-pole interface contactor relays</b>		Coil consumption 1.4 ... 2.4 W	Type	<b>KC6</b>			
<b>Wide range types</b>		Extended coil voltage and temperature	Type	<b>TKC6</b>			
<b>IEC</b>	<b>Rated operational current AC-15</b>	220-230-240 V	A	4			
		380-400 V	A	3			
	<b>Rated operational current DC-13</b>	24 V	A	2.5			

## Main accessories

<b>Auxiliary contact blocks</b>	Front mounting	CAF6
	Side mounting	CA6-11K



Soldering pins				Flat pins			
B6...P	B7...P	-	-	B6...F	B7...F	-	-
-	-	VB6...P	VB7...P	-	-	VB6...F	VB7...F
-	-	VB6A...P (2)	VB7A...P (2)	-	-	VB6A...F (2)	VB7A...F (2)
BC6...P	BC7...P	-	-	BC6...F	BC7...F	-	-
BC6...P	B7D...P (1)	-	-	BC6...F	B7D...F (1)	-	-
-	BC7...P	VBC6...P	VBC7...P	-	BC7...F	VBC6...F	VBC7...F
-	-	VBC6A...P (2)	VBC7A...P (2)	-	-	VBC6A...F (2)	VBC7A...F (2)
2,2	3	2,2	3	2,2	3	2,2	3
4	5,5	4	5,5	4	5,5	4	5,5
12	12	12	12	20	20	20	20
2	3	2	3	2	3	2	3
3	5	3	5	3	5	3	5
12 (300 V)	16 (600 V)	12 (300 V)	16 (600 V)	12 (300 V)	16 (600 V)	12 (300 V)	16 (600 V)

-	-
CA6-11K-P	CA6-11K-F
-	-
-	-

-	-
-	-

MS116, MS132	MS116, MS132
MO132	MO132
-	-



Soldering pins		Flat pins	
K6...P		K6...F	
KC6...P		KC6...F	
KC6...P		KC6...F	
4		4	
3		3	
2,5		2,5	

-	-
CA6-11K-P	CA6-11K-F

# B6, B7 3-pole mini-contactors

AC operated - with screw terminals - 4 to 5.5 kW - 3 to 5 hp



2CDC211014F0010

B6-30-10



2CDC211014F0011

B7-30-10



2CDC211069F0011

VB7-30-10



2CDC211029F0011

B6-22-00

## Description

Mini contactors are space optimized control products for switching resistive or motor loads. Compact motor starting modules up to 5.5 kW can be realized with small space as a premium.

- possible to add 1 auxiliary-contact block at top or on side
- surge suppressors and accessories for wiring and connecting links available

## Ordering details

IEC Rated power 400 V AC-3 kW	current $\theta \leq 40^\circ\text{C}$ AC-1 A	UL/CSA 3-phase motor rating 480 V hp	General use rating	Rated voltage $U_c$		Auxiliary contacts fitted 	Type	Order code	Pkg qty	Weight (1 pce) kg
				50 Hz V AC	60 Hz V AC					
<b>B6-B7 contactors with 1 N.O. auxiliary contact</b>										
4	16	3	300 V/12A	24	24	1 0	B6-30-10-01	GJL1211001R0101	10	0.175
				110 ... 127	110 ... 127	1 0	B6-30-10-84	GJL1211001R8104	10	0.175
				220 ... 240	220 ... 240	1 0	B6-30-10-80	GJL1211001R8100	10	0.175
5.5	20	5	600 V/16 A	24	24	1 0	B7-30-10-01	GJL1311001R0101	10	0.175
				110 ... 127	110 ... 127	1 0	B7-30-10-84	GJL1311001R8104	10	0.175
				220 ... 240	220 ... 240	1 0	B7-30-10-80	GJL1311001R8100	10	0.175
<b>Contactors with 1 N.C. auxiliary contact</b>										
4	16	3	300 V/12A	24	24	0 1	B6-30-01-01	GJL1211001R0011		
				110 ... 127	110 ... 127	0 1	B6-30-01-84	GJL1211001R8014	10	0.175
				220 ... 240	220 ... 240	0 1	B6-30-01-80	GJL1211001R8010	10	0.175
5.5	20	5	600 V/16 A	24	24	0 1	B7-30-01-01	GJL1311001R0011	10	0.175
				110 ... 127	110 ... 127	0 1	B7-30-01-84	GJL1311001R8014	10	0.175
				220 ... 240	220 ... 240	0 1	B7-30-01-80	GJL1311001R8010	10	0.175
<b>BC6-BC7 contactors with 1 N.O. auxiliary contact</b>										
4	16	3	300 V/12A	24	24	1 0	BC6-30-10-01	GJL1213001R0101	10	0.175
				110 ... 125	110 ... 125	1 0	BC6-30-10-04	GJL1213001R0104	10	0.175
				220 ... 240	220 ... 240	1 0	BC6-30-10-05	GJL1213001R0105	10	0.175
5.5	20	5	600 V/16 A	24	24	1 0	BC7-30-10-01	GJL1313001R0101	10	0.175
				110 ... 125	110 ... 125	1 0	BC7-30-10-04	GJL1313001R0104	10	0.175
				220 ... 240	220 ... 240	1 0	BC7-30-10-05	GJL1313001R0105	10	0.175
<b>Contactors with 1 N.C. auxiliary contact</b>										
4	16	3	300 V/12A	24	24	0 1	BC6-30-01-01	GJL1213001R0011	10	0.175
				110 ... 125	110 ... 125	0 1	BC6-30-01-04	GJL1213001R0014	10	0.175
				220 ... 240	220 ... 240	0 1	BC6-30-01-05	GJL1213001R0015	10	0.175
5.5	20	5	600 V/16 A	24	24	0 1	BC7-30-01-01	GJL1313001R0011	10	0.175
				110 ... 125	110 ... 125	0 1	BC7-30-01-04	GJL1313001R0014	10	0.175
				220 ... 240	220 ... 240	0 1	BC7-30-01-05	GJL1313001R0015	10	0.175
<b>Reversing contactors</b>										
4	16	3	300 V/12A	24	24	1 0	VB6-30-10-01	GJL1211901R0101	5	0.355
						0 1	VB6-30-01-01	GJL1211901R0011	5	0.355
				110 ... 127	110 ... 127	1 0	VB6-30-10-84	GJL1211901R8104	5	0.355
						0 1	VB6-30-01-84	GJL1211901R8014	5	0.355
				220 ... 240	220 ... 240	1 0	VB6-30-10-80	GJL1211901R8100	5	0.355
						0 1	VB6-30-01-80	GJL1211901R8010	5	0.355
5.5	20	5	600 V/16 A	24	24	1 0	VB7-30-10-01	GJL1311901R0101	5	0.355
						0 1	VB7-30-01-01	GJL1311901R0011	5	0.355
				110 ... 127	110 ... 127	1 0	VB7-30-10-84	GJL1311901R8104	5	0.355
						0 1	VB7-30-01-84	GJL1311901R8014	5	0.355
				220 ... 240	220 ... 240	1 0	VB7-30-10-80	GJL1311901R8100	5	0.355
						0 1	VB7-30-01-80	GJL1311901R8010	5	0.355
<b>4 N.O. main poles</b>										
16			300 V/12A	24	24	0 0	B6-40-00-01	GJL1211201R0001	10	0.175
				110 ... 127	110 ... 127	0 0	B6-40-00-84	GJL1211201R8004	10	0.175
				220 ... 240	220 ... 240	0 0	B6-40-00-80	GJL1211201R8000	10	0.175
20			600 V/16 A	24	24	0 0	B7-40-00-01	GJL1311201R0001	10	0.175
				110 ... 127	110 ... 127	0 0	B7-40-00-84	GJL1311201R8004	10	0.175
				220 ... 240	220 ... 240	0 0	B7-40-00-80	GJL1311201R8000	10	0.175
<b>2 N.O. + 2 N.C. main poles</b>										
16			300 V/12A	24	24	0 0	B6-22-00-01	GJL1211501R0001	10	0.175
				110 ... 127	110 ... 127	0 0	B6-22-00-84	GJL1211501R8004	10	0.175
				220 ... 240	220 ... 240	0 0	B6-22-00-80	GJL1211501R8000	10	0.175
20			600 V/16 A	24	24	0 0	B7-22-00-01	GJL1311501R0001	10	0.175
				110 ... 127	110 ... 127	0 0	B7-22-00-84	GJL1311501R8004	10	0.175
				220 ... 240	220 ... 240	0 0	B7-22-00-80	GJL1311501R8000	10	0.175

Please see main catalog for further types

# T16 thermal overload relays

## 0.10 ... 16.0 A



2CDC231009R0013

T16-16



2CDC231028V0013

T16 + DB16



2CDC231028F0011

DB16



2CDC211012F0010

CAF6-11N



2CDC211008F0010

CA6-11E

### Description

The T16 thermal overload relays are economic electromechanical protection devices for the main circuit. They offer reliable protection for motors in the event of overload or phase failure. The devices have trip class 10.

### Functions

- Manual or automatic reset selectable
- Phase loss sensitive acc. to IEC/EN 60947-4-1
- Two electrically isolated auxiliary contacts – 1 N.O. + 1 N.C.
- TEST and STOP function – Trip indication on the front
- Temperature compensation
- Suitable for three- and single-phase applications

### Ordering details

Setting range	Short-circuit protective device	Trip class	Type	Order code	Weight (1 pce) kg
<b>A</b>					
0.10 ... 0.13	0.5 A, Fuse type T	10	T16-0.13	1SAZ711201R1005	0.100
0.13 ... 0.17	1.0 A, Fuse type T	10	T16-0.17	1SAZ711201R1008	0.100
0.17 ... 0.23	1.0 A, Fuse type T	10	T16-0.23	1SAZ711201R1009	0.100
0.23 ... 0.31	1.0 A, Fuse type T	10	T16-0.31	1SAZ711201R1013	0.100
0.31 ... 0.41	2.0 A, Fuse type gG	10	T16-0.41	1SAZ711201R1014	0.100
0.41 ... 0.55	2.0 A, Fuse type gG	10	T16-0.55	1SAZ711201R1017	0.100
0.55 ... 0.74	4.0 A, Fuse type gG	10	T16-0.74	1SAZ711201R1021	0.100
0.74 ... 1.00	6.0 A, Fuse type gG	10	T16-1.0	1SAZ711201R1023	0.100
1.00 ... 1.30	6.0 A, Fuse type gG	10	T16-1.3	1SAZ711201R1025	0.100
1.30 ... 1.70	10.0 A, Fuse type gG	10	T16-1.7	1SAZ711201R1028	0.100
1.70 ... 2.30	10.0 A, Fuse type gG	10	T16-2.3	1SAZ711201R1031	0.100
2.30 ... 3.10	10.0 A, Fuse type gG	10	T16-3.1	1SAZ711201R1033	0.100
3.10 ... 4.20	20.0 A, Fuse type gG	10	T16-4.2	1SAZ711201R1035	0.100
4.20 ... 5.70	20.0 A, Fuse type gG	10	T16-5.7	1SAZ711201R1038	0.100
5.70 ... 7.60	35.0 A, Fuse type gG	10	T16-7.6	1SAZ711201R1040	0.100
7.60 ... 10.0	35.0 A, Fuse type gG	10	T16-10	1SAZ711201R1043	0.104
10.0 ... 13.0	40.0 A, Fuse type gG	10	T16-13	1SAZ711201R1045	0.104
13.0 ... 16.0	40.0 A, Fuse type gG	10	T16-16	1SAZ711201R1047	0.104


Please see main catalog for electronic overload relays

### Ordering details accessories

For thermal overload relays	Description	Type	Order code	Weight (1 pce) kg
<b>A</b>				
T16	Single mounting kit	DB16	1SAZ701901R0001	0.032

### Auxiliary contact blocks for mini contactors, 4 A, 240 V AC-15 / 2.5 A, 24V DC-13

#### Ordering details

For contactors	Auxiliary contacts	Type	Order code	Pkg qty	Weight (1 pce)
				pce	kg
<b>Front mounted instantaneous auxiliary contact blocks <sup>1)</sup></b>					
B6-, B7-30-10, BC6-, BC7-30-10	1 1	CAF6-11M	GJL1201330R0003	10	0.020
VB6, VB7, VBC6, VBC7, VB6A, VB7A	2 0	CAF6-20M	GJL1201330R0007	10	0.020
VBC6A, VBC7A	0 2	CAF6-02M	GJL1201330R0011	10	0.020
<b>Side mounted instantaneous auxiliary contact block <sup>1)</sup></b>					
B6-, B7-30-10, BC6-, BC7-30-10	1 1	CA6-11M	GJL1201317R0003	10	0.030

<sup>1)</sup> CA6 and CAF6 must not be fitted simultaneously.

Please see main catalogue for more typers and technical information

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