

Mini contactors
Overview and applications

Power and productivity
for a better world™

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

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

Overload relays

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

Manual motor starters

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

Contactor relays



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

Main accessories

Auxiliary contact blocks	Front mounting	CAF6
	Side mounting	CA6-11K






	Soldering pins				Flat pins			
	B6...P	B7...P	-	-	B6...F	B7...F	-	-
	-	-	VB6...P VB6A...P (2)	VB7...P VB7A...P (2)	-	-	VB6...F VB6A...F (2)	VB7...F VB7A...F (2)
	-	-	-	-	-	-		
	BC6...P	BC7...P B7D...P (1)	-	-	BC6...F	BC7...F B7D...F (1)	-	-
	BC6...P	BC7...P	-	-	BC6...F	BC7...F	-	-
	-	-	VBC6...P VBC6A...P (2)	VBC7...P VBC7A...P (2)	-	-	VBC6...F VBC6A...F (2)	VBC7...F 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



B6-30-10



B7-30-10



VB7-30-10



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	current θ ≤ 40 °C AC-1	UL/CSA 3-phase motor rating 480 V	General use rating	Rated voltage U_C 50 Hz	60 Hz	Auxiliary contacts fitted		Type	Order code	Pkg qty	Weight (1 pce)
kW	A	hp		V AC	V AC					pce	kg
B6-B7 contactors with 1 N.O. auxiliary contact											
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
Contactors with 1 N.C. auxiliary contact											
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
BC6-BC7 contactors with 1 N.O. auxiliary contact											
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
Contactors with 1 N.C. auxiliary contact											
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
Reversing contactors											
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
4 N.O. main poles											
	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
2 N.O. + 2 N.C. main poles											
	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


2CDC231009V0013

T16-16


2CDC231025V0013

T16 + DB16


2CDC231002F0011

DB16


2CDC211012R0010

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 auxlilary 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 A	Short-circuit protective device	Trip class	Type	Order code	Weight (1 pce) kg
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 A	Description	Type	Order code	Weight (1 pce) kg
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 pce	Weight (1 pce) kg
Front mounted instantaneous auxiliary contact blocks [1]					
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
Side mounted instantaneous auxiliary contact block [1]					
B6-, B7-30-10, BC6-, BC7-30-10	1 1	CA6-11M	GJL1201317R0003	10	0.030

[1] CA6 and CAF6 must not be fitted simultaneously.

Please see main catalogue for more typers and technical information

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