



**3-pole Mini Contactors**

**4-pole Mini Contactors**

**Compact Reversing Contactors**

**Interface Mini Contactors**

**Mini Contactors for PLC's Outputs**

*a.c. Circuit Switching*

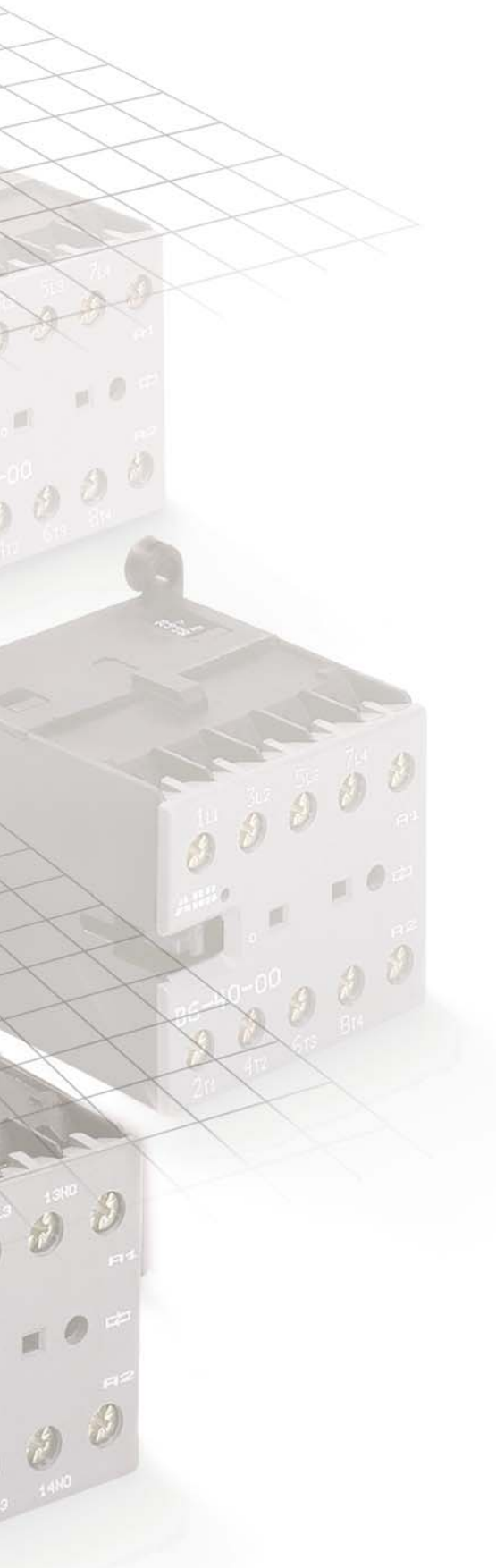
*d.c. Circuit Switching*

*Lighting Circuits*

*Interface and PLC's Outputs*



**Mini contactors B 6 and B 7**  
**Mini contactor relays K..**  
**Compact reversing contactors VB..**  
**Thermal overload relay T 7 DU**



**Contents**

**Mini Contactors B 6, BC 6, B 7, BC 7**

Ordering Details ..... 6/2

**Compact Reversing Contactors**

Ordering Details ..... 6/3

**Interface Motor Contactors**

Ordering Details ..... 6/5

**Mini Contactors Relays, Interface Contactor Relays**

Ordering Details ..... 6/6

**Mini Motor Contactors TBC 7, Mini Contactor Relays TKC 6**

Ordering Details ..... 6/7

**Accessories for Mini Contactors** ..... 6/8

**Technical Data** ..... 6/10

**Thermal Overload Relay T 7 DU**

Ordering Details ..... 6/14

Technical Data ..... 6/15

**Approvals** ..... 6/16

**Dimensions** ..... Section 9

**Coil Voltages for Mini Contactors**

**B 6, B 7, VB 6(A), VB 7(A), BC 6, BC 7, VBC 6(A), VBC 7(A), K 6, KC 6.**

<b>AC</b>		<b>DC</b>	
40-450 Hz	Code number	DC	Code number
V (1)	□ .. □	V	□ .. □
24	0 .. 1	12	0 .. 7
42	0 .. 2	24	0 .. 1
48	0 .. 3	42	0 .. 2
110 ... 127	8 .. 4	48	1 .. 6
220 ... 240	8 .. 0	60	0 .. 3
380 ... 415	8 .. 5	110 ... 125	0 .. 4
		220 ... 240	0 .. 5

(1) Coil voltage range: 0.85 ... 1.1 x U<sub>c</sub>

# Mini contactors B 6, BC 6, B 7, BC 7

## Ordering details



B6 30-10

SST 169 91 R



B 6-30-10-F

SST 169 91 R



B 6-30-10-P

SST 161 91 R



B 7-30-10

ST16991A



B 7-40-00

SST 010 93 R



B 7-40-00 with auxiliary switch CAF 6-11 screwed on afterwards

SST 009 93 R

Type	Order code See Page 6/1 for adding code suffixes □ .. □ to the order code	Auxiliary switches		Motor output 220 V 240 V kW	AC-2, AC-3 <b>380 V</b> <b>440 V</b> <b>kW</b>		Packing unit piece	Weight per piece kg
		NO	NC					

### Mini contactors B 6

#### Mini contactors, with screw connection, for AC operation, 3.5 VA

B 6-30-10	GJL 121 1001 R □ 10 □	1	0	2.2	4		10	0.180
B 6-30-01	GJL 121 1001 R □ 01 □	0	1				10	0.180
B 6-40-00	GJL 121 1201 R □ 00 □	0	0				10	0.180

#### Mini contactors, with flat pin connection, for AC operation, 3.5 VA

B 6-30-10-F	GJL 121 1003 R □ 10 □	1	0	2.2	4		10	0.170
B 6-30-01-F	GJL 121 1003 R □ 01 □	0	1				10	0.170
B 6-40-00-F	GJL 121 1203 R □ 00 □	0	0				10	0.170

#### Mini contactors, with soldering pins, for AC operation, 3.5 VA, $I_{th} < 8 A$

B 6-30-10-P	GJL 121 1009 R □ 10 □	1	0	2.2	4		10	0.170
B 6-30-01-P	GJL 121 1009 R □ 01 □	0	1				10	0.170

#### Mini contactors, with screw connection, for DC operation, 3.5 W

BC 6-30-10	GJL 121 3001 R □ 10 □	1	0	2.2	4		100	0.180
BC 6-30-01	GJL 121 3001 R □ 01 □	0	1				10	0.180

#### Mini contactors, with flat pin connection, for DC operation, 3.5 W

BC 6-30-10-F	GJL 121 3003 R □ 10 □	1	0	2.2	4		10	0.170
BC 6-30-01-F	GJL 121 3003 R □ 01 □	0	1				10	0.170

#### Mini contactors, with soldering pins, for DC operation, 3.5 W, $I_{th} < 8 A$

BC 6-30-10-P	GJL 121 3009 R □ 10 □	1	0	2.2	4		10	0.170
BC 6-30-01-P	GJL 121 3009 R □ 01 □	0	1				10	0.170

### Mini contactors B 7

#### Mini contactors, with screw connection, for AC operation, 3.5 VA

B 7-30-10	GJL 131 1001 R □ 10 □	1	0	3.0	5.5		10	0.180
B 7-30-01	GJL 131 1001 R □ 01 □	0	1				10	0.180
B 7-40-00	GJL 131 1201 R □ 00 □	0	0				10	0.180

#### Mini contactors, with flat pin connection, for AC operation, 3.5 VA

B 7-30-10-F	GJL 131 1003 R □ 10 □	1	0	3.0	5.5		10	0.170
B 7-30-01-F	GJL 131 1003 R □ 01 □	0	1				10	0.170
B 7-40-00-F	GJL 131 1203 R □ 00 □	0	0				10	0.170

#### Mini contactors, with soldering pins, for AC operation, 3.5 VA, $I_{th} < 8 A$

B 7-30-10-P	GJL 131 1009 R □ 10 □	1	0	3.0	5.5		10	0.170
B 7-30-01-P	GJL 131 1009 R □ 01 □	0	1				10	0.170

#### Mini contactors, with screw connection, for DC operation, 3.5 W

BC 7-30-10	GJL 131 3001 R □ 10 □	1	0	3.0	5.5		10	0.180
BC 7-30-01	GJL 131 3001 R □ 01 □	0	1				10	0.180

#### Mini contactors, with flat pin connection, for DC operation, 3.5 W

BC 7-30-10-F	GJL 131 3003 R □ 10 □	1	0	3.0	5.5		10	0.170
BC 7-30-01-F	GJL 131 3003 R □ 01 □	0	1				10	0.170

#### Mini contactors, with screw connection, for 24 V DC operation, with integr. surpressor diod, 3.5 W

B 7 D-30-10	GJL 131 7001 R 0101	1	0	3.0	5.5		10	0.170
B 7 D-30-01	GJL 131 7001 R 0011	0	1				10	0.170
B 7 D-40-00	GJL 131 7201 R 0001	0	0				10	0.170

#### Mini contactors, with soldering pins, for DC operation, 3.5 W, $I_{th} < 8 A$

BC 7-30-10-P	GJL 131 3009 R □ 10 □	1	0	3.0	5.5		10	0.170
BC 7-30-01-P	GJL 131 3009 R □ 01 □	0	1				10	0.170

#### Mini contactors, with screw connection, for 220 V DC operation, with integr. surpressor diod, 3.5 W

B 7 D-30-10	GJL 131 7001 R 0105	1	0	3.0	5.5		10	0.170
B 7 D-30-01	GJL 131 7001 R 0015	0	1				10	0.170
B 7 D-40-00	GJL 131 7201 R 0005	0	0				10	0.170

# Compact reversing contactors

## Ordering details

### Compact reversing contactors VB 6, VB 7 and VB 6A, VB 7A

The mechanical interlock between the two contactors mechanically prevents switch-on of one contactor for as long as the other contactor is still on and vice versa. If reversing contactors are switched over too quickly, this involves the risk of a phase-to-phase short-circuit. This will be the case if the arc of the contactor switching off has not yet been quenched when the contacts of the contactor switching on are already closed.

In order to avoid these risks, both contactor coils must be de-energised for at least **50 ms** and must also be mutually interlocked electrically.

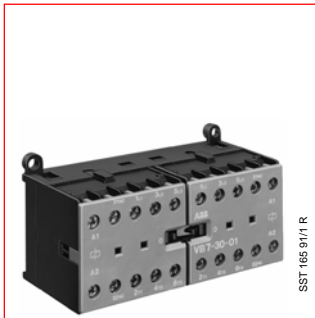
The compact reversing contactors are offered with two different mechanical interlocks:

- VB 6 resp. VB 7: normal interlock
- VB 6A resp. VB 7A: interlock with mechanical safety blocking function

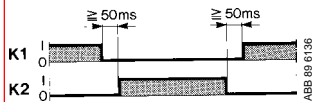
The safety blocking function is triggered if the voltage is applied to the coil of the contactor to be switched on before the contactor to be switched off has dropped out.

Safety blocking means that the contactor to be switched on is locked mechanically in OFF condition owing to the switch-on signal issued too early, and this state is retained until the blocking function is cancelled again as follows: disconnect the voltage from the two contactor coils and then reconnect the voltage to the coil of the contactor to be switched on.

The contactor coils are designed for continuous operation when the contactor is de-energised, i.e. the coil is not damaged if the mechanical interlock prevents switch-on of the contactor with the coil voltage applied.



VB 7-30-01



When the direction of rotation is changed, both contactor coils of VB 6A, VB 7A have to be de-energized for more than 50 ms.

Type	Order code See Page 6/1 for adding code suffixes <input type="checkbox"/> .. <input type="checkbox"/> to the order code	Auxiliary switches		Motor output AC-2, AC-3		Pack- ing unit piece	Weight per piece kg
		NO	NC	max. 220 V 240 V kW	380 V 440 V kW		

### Compact reversing contactors VB 6, VBC 6, with mechanical interlock

#### Reversing contactors, with screw connection, for AC operation, 3.5 VA

VB 6-30-10	GJL 121 1901 R <input type="checkbox"/> 10 <input type="checkbox"/>	1	0	2.2	4	5	0.340
VB 6-30-01	GJL 121 1901 R <input type="checkbox"/> 01 <input type="checkbox"/>	0	1			5	0.340

#### Reversing contactors, with flat pin connection, for AC operation, 3.5 VA

VB 6-30-10-F	GJL 121 1903 R <input type="checkbox"/> 10 <input type="checkbox"/>	1	0	2.2	4	5	0.340
VB 6-30-01-F	GJL 121 1903 R <input type="checkbox"/> 01 <input type="checkbox"/>	0	1			5	0.340

#### Reversing contactors, with soldering pins, for AC operation, 3.5 VA, $I_{th} < 8 A$

VB 6-30-10-P	GJL 121 1909 R <input type="checkbox"/> 10 <input type="checkbox"/>	1	0	2.2	4	5	0.340
VB 6-30-01-P	GJL 121 1909 R <input type="checkbox"/> 01 <input type="checkbox"/>	0	1			5	0.340

#### Reversing contactors, with screw connection, for DC operation, 3,5 W

VBC 6-30-10	GJL 121 3901 R <input type="checkbox"/> 10 <input type="checkbox"/>	1	0	2.2	4	5	0.340
VBC 6-30-01	GJL 121 3901 R <input type="checkbox"/> 01 <input type="checkbox"/>	0	1			5	0.340

#### Reversing contactors, with flat pin connection, for DC operation, 3,5 W

VBC 6-30-10-F	GJL 121 3903 R <input type="checkbox"/> 10 <input type="checkbox"/>	1	0	2.2	4	5	0.340
VBC 6-30-01-F	GJL 121 3903 R <input type="checkbox"/> 01 <input type="checkbox"/>	0	1			5	0.340

#### Reversing contactors, with soldering pins, for DC operation, 3,5 W, $I_{th} < 8 A$

VBC 6-30-10-P	GJL 121 3909 R <input type="checkbox"/> 10 <input type="checkbox"/>	1	0	2.2	4	5	0.340
VBC 6-30-01-P	GJL 121 3909 R <input type="checkbox"/> 01 <input type="checkbox"/>	0	1			5	0.340

### Compact reversing contactors VB 7, VBC 7, with mechanical interlock

#### Reversing contactors, with screw connection, for AC operation, 3.5 VA

VB 7-30-10	GJL 131 1901 R <input type="checkbox"/> 10 <input type="checkbox"/>	1	0	3.0	5.5	5	0.340
VB 7-30-01	GJL 131 1901 R <input type="checkbox"/> 01 <input type="checkbox"/>	0	1			5	0.340

#### Reversing contactors, with flat pin connection, for AC operation, 3.5 VA

VB 7-30-10-F	GJL 131 1903 R <input type="checkbox"/> 10 <input type="checkbox"/>	1	0	3.0	5.5	5	0.340
VB 7-30-01-F	GJL 131 1903 R <input type="checkbox"/> 01 <input type="checkbox"/>	0	1			5	0.340

#### Reversing contactors, with soldering pins, for AC operation, 3.5 VA, $I_{th} < 8 A$

VB 7-30-10-P	GJL 131 1909 R <input type="checkbox"/> 10 <input type="checkbox"/>	1	0	3.0	5.5	5	0.340
VB 7-30-01-P	GJL 131 1909 R <input type="checkbox"/> 01 <input type="checkbox"/>	0	1			5	0.340

#### Reversing contactors, with screw connection, for DC operation, 3.5 W

VBC 7-30-10	GJL 131 3901 R <input type="checkbox"/> 10 <input type="checkbox"/>	1	0	3.0	5.5	5	0.340
VBC 7-30-01	GJL 131 3901 R <input type="checkbox"/> 01 <input type="checkbox"/>	0	1			5	0.340

#### Reversing contactors, with flat pin connection, for DC operation, 3.5 W

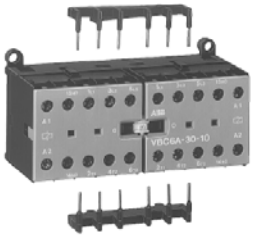
VBC 7-30-10-F	GJL 131 3903 R <input type="checkbox"/> 10 <input type="checkbox"/>	1	0	3.0	5.5	5	0.340
VBC 7-30-01-F	GJL 131 3903 R <input type="checkbox"/> 01 <input type="checkbox"/>	0	1			5	0.340

#### Reversing contactors, with soldering pins, for DC operation, 3.5 W, $I_{th} < 8 A$

VBC 7-30-10-P	GJL 131 3909 R <input type="checkbox"/> 10 <input type="checkbox"/>	1	0	3.0	5.5	5	0.340
VBC 7-30-01-P	GJL 131 3909 R <input type="checkbox"/> 01 <input type="checkbox"/>	0	1			5	0.340

# Compact reversing contactors

## Ordering details



SST 276 92 R

Reversing contactor VBC 6A-3-10  
Reversing connection BMS 6-30

Type	Order code See Page 6/1 for adding code suffixes <input type="checkbox"/> ... <input type="checkbox"/> to the order code	Auxiliary switches		Motor output AC-2, AC-3		Pack- ing unit piece	Weight per piece kg
		NO	NC	220 V 240 V kW	380 V 440 V kW		

### Compact reversing contactors VB 6A, VBC 6A, with mechanical interlock

#### Reversing contactors, with screw connection, for AC operation, 3.5 VA

VB 6A-30-10	GJL 121 1911 R <input type="checkbox"/> 10 <input type="checkbox"/>	1	0	2.2	4	5	0.340
VB 6A-30-01	GJL 121 1911 R <input type="checkbox"/> 01 <input type="checkbox"/>	0	1			5	0.340

#### Reversing contactors, with flat pin connection, for AC operation, 3.5 VA

VB 6A-30-10-F	GJL 121 1913 R <input type="checkbox"/> 10 <input type="checkbox"/>	1	0	2.2	4	5	0.340
VB 6A-30-01-F	GJL 121 1913 R <input type="checkbox"/> 01 <input type="checkbox"/>	0	1			5	0.340

#### Reversing contactors, with soldering pins, for AC operation, 3.5 VA, $I_{th} < 8 A$

VB 6A-30-10-P	GJL 121 1919 R <input type="checkbox"/> 10 <input type="checkbox"/>	1	0	2.2	4	5	0.340
VB 6A-30-01-P	GJL 121 1919 R <input type="checkbox"/> 01 <input type="checkbox"/>	0	1			5	0.340

#### Reversing contactors, with screw connection, for DC operation, 3.5 W

VBC 6A-30-10	GJL 121 3911 R <input type="checkbox"/> 10 <input type="checkbox"/>	1	0	2.2	4	5	0.340
VBC 6A-30-01	GJL 121 3911 R <input type="checkbox"/> 01 <input type="checkbox"/>	0	1			5	0.340

#### Reversing contactors, with flat pin connection, for DC operation, 3.5 W

VBC 6A-30-10-F	GJL 121 3913 R <input type="checkbox"/> 10 <input type="checkbox"/>	1	0	2.2	4	5	0.340
VBC 6A-30-01-F	GJL 121 3913 R <input type="checkbox"/> 01 <input type="checkbox"/>	0	1			5	0.340

#### Reversing contactors, with soldering pins, for DC operation, 3.5 W, $I_{th} < 8 A$

VBC 6A-30-10-P	GJL 121 3919 R <input type="checkbox"/> 10 <input type="checkbox"/>	1	0	2.2	4	5	0.340
VBC 6A-30-01-P	GJL 121 3919 R <input type="checkbox"/> 01 <input type="checkbox"/>	0	1			5	0.340

### Compact reversing contactors VB 7A, VBC 7A, with mechanical interlock

#### Reversing contactors, with screw connection, for AC operation, 3.5 VA

VB 7A-30-10	GJL 131 1911 R <input type="checkbox"/> 10 <input type="checkbox"/>	1	0	3.0	5.5	5	0.340
VB 7A-30-01	GJL 131 1911 R <input type="checkbox"/> 01 <input type="checkbox"/>	0	1			5	0.340

#### Reversing contactors, with flat pin connection, for AC operation, 3.5 VA

VB 7A-30-10-F	GJL 131 1913 R <input type="checkbox"/> 10 <input type="checkbox"/>	1	0	3.0	5.5	5	0.340
VB 7A-30-01-F	GJL 131 1913 R <input type="checkbox"/> 01 <input type="checkbox"/>	0	1			5	0.340

#### Reversing contactors, with soldering pins, for AC operation, 3.5 VA, $I_{th} < 8 A$

VB 7A-30-10-P	GJL 131 1919 R <input type="checkbox"/> 10 <input type="checkbox"/>	1	0	3.0	5.5	5	0.340
VB 7A-30-01-P	GJL 131 1919 R <input type="checkbox"/> 01 <input type="checkbox"/>	0	1			5	0.340

#### Reversing contactors, with screw connection, for DC operation, 3.5 W

VBC 7A-30-10	GJL 131 3911 R <input type="checkbox"/> 10 <input type="checkbox"/>	1	0	3.0	5.5	5	0.340
VBC 7A-30-01	GJL 131 3911 R <input type="checkbox"/> 01 <input type="checkbox"/>	0	1			5	0.340

#### Reversing contactors, with flat pin connection, for DC operation, 3.5 W

VBC 7A-30-10-F	GJL 131 3913 R <input type="checkbox"/> 10 <input type="checkbox"/>	1	0	3.0	5.5	5	0.340
VBC 7A-30-01-F	GJL 131 3913 R <input type="checkbox"/> 01 <input type="checkbox"/>	0	1			5	0.340

#### Reversing contactors, with soldering pins, for DC operation, 3.5 W, $I_{th} < 8 A$

VBC 7A-30-10-P	GJL 131 3919 R <input type="checkbox"/> 10 <input type="checkbox"/>	1	0	3.0	5.5	5	0.340
VBC 7A-30-01-P	GJL 131 3919 R <input type="checkbox"/> 01 <input type="checkbox"/>	0	1			5	0.340

# Interface motor contactors

## Mini contactors for connection to PLCs

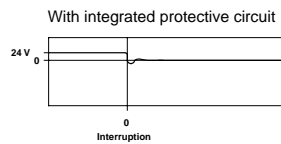
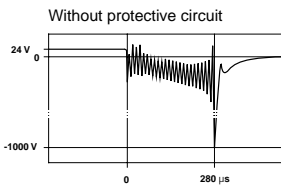
### Ordering details



BC 7-30-10- 1.4

ABB 85 08441/R

Oscillograms of control circuit interruption



- Controlled directly by PLC
- Integrated protective circuit with diodes and additional surge suppressor
- Non-confusable coil connection
- You save time and money for additional external wiring
- Thermal overload relay T7 DU available as accessory.

### BC 6 Interface motor contactors

Auxiliary switch blocks **cannot** be fitted later on !

Type	Order code	Auxiliary switches		Motor output AC-2, AC-3		Pack- ing unit piece	Weight per piece kg
		NO	NC	220 V 240 V kW	380 V 440 V kW		
<b>Motor contactors, with screw connection, for DC operation 24V / 1.4 W</b>							
BC 6-30-10-1.4	GJL 121 3001 R 8101	1	0	2.2	4	10	0.180
BC 6-30-01-1.4	GJL 121 3001 R 8011	0	1	2.2	4	10	0.180
<b>Motor contactors, with flat pin connection, for DC operation 24V / 1.4 W</b>							
BC 6-30-10-F-1.4	GJL 121 3003 R 8101	1	0	2.2	4	10	0.180
BC 6-30-01-F-1.4	GJL 121 3003 R 8011	0	1	2.2	4	10	0.180
<b>Motor contactors, with soldering pins, for DC operation 24V / 1.4 W, I<sub>th</sub> &lt; 8 A</b>							
BC 6-30-10-P-1.4	GJL 121 3009 R 8101	1	0	2.2	4	10	0.170
BC 6-30-01-P-1.4	GJL 121 3009 R 8011	0	1	2.2	4	10	0.170
<b>Motor contactors, with screw connection, for DC operation 17 ... 32 V / 2.4 W</b>							
BC 6-30-10-2.4	GJL 121 3001 R 5101	1	0	2.2	4	10	0.180
BC 6-30-01-2.4	GJL 121 3001 R 5011	0	1	2.2	4	10	0.180
<b>Motor contactors, with flat pin connection, for DC operation 17 ... 32 V / 2.4 W</b>							
BC 6-30-10-F-2.4	GJL 121 3003 R 5101	1	0	2.2	4	10	0.170
BC 6-30-01-F-2.4	GJL 121 3003 R 5011	0	1	2.2	4	10	0.170
<b>Motor contactors, with soldering pins, for DC operation 17 ... 32 V / 2.4 W, I<sub>th</sub> &lt; 8 A</b>							
BC 6-30-10-P-2.4	GJL 121 3009 R 5101	1	0	2.2	4	10	0.170
BC 6-30-01-P-2.4	GJL 121 3009 R 5011	0	1	2.2	4	10	0.170

### BC 7 Interface motor contactors

Auxiliary switch blocks **cannot** be fitted later on !

<b>Motor contactors, with screw connection, for DC operation 24V / 1.4 W</b>							
BC 7-30-10-1.4	GJL 131 3001 R 8101	1	0	3.0	5.5	10	0.170
BC 7-30-01-1.4	GJL 131 3001 R 8011	0	1	3.0	5.5	10	0.170
<b>Motor contactors, with flat pin connection, for DC operation 24V / 1.4 W</b>							
BC 7-30-10-F-1.4	GJL 131 3003 R 8101	1	0	3.0	5.5	10	0.170
BC 7-30-01-F-1.4	GJL 131 3003 R 8011	0	1	3.0	5.5	10	0.170
<b>Motor contactors, with soldering pins, for DC operation 24V / 1.4 W, I<sub>th</sub> &lt; 8 A</b>							
BC 7-30-10-P-1.4	GJL 131 3009 R 8101	1	0	3.0	5.5	10	0.170
BC 7-30-01-P-1.4	GJL 131 3009 R 8011	0	1	3.0	5.5	10	0.170
<b>Motor contactors, with screw connection, for DC operation 17 ... 32 V / 2.4 W</b>							
BC 7-30-10-2.4	GJL 131 3001 R 5101	1	0	3.0	5.5	10	0.170
BC 7-30-01-2.4	GJL 131 3001 R 5011	0	1	3.0	5.5	10	0.170
<b>Motor contactors, with flat pin connection, for DC operation 17 ... 32 V / 2.4 W</b>							
BC 7-30-10-F-2.4	GJL 131 3003 R 5101	1	0	3.0	5.5	10	0.170
BC 7-30-01-F-2.4	GJL 131 3003 R 5011	0	1	3.0	5.5	10	0.170
<b>Motor contactors, with soldering pins, for DC operation 17 ... 32 V / 2.4 W, I<sub>th</sub> &lt; 8 A</b>							
BC 7-30-10-P-2.4	GJL 131 3009 R 5101	1	0	3.0	5.5	10	0.170
BC 7-30-01-P-2.4	GJL 131 3009 R 5011	0	1	3.0	5.5	10	0.170

### B 6 S Mini contactors for connection to PLCs

... with integrated protective circuit

Auxiliary switch blocks **cannot** be fitted later on !

<b>Motor contactors with screw connection, for DC operation 24 V / 1.7 W</b>							
B6 S-30-10-1.7	GJL 121 3001 R7101	1	0	2.2	4.0	10	0.180
B6 S-30-01-1.7	GJL 121 3001 R7011	0	1	2.2	4.0	10	0.180
<b>Motor contactors with screw connection, for DC operation 17...32 V / 2.8 W</b>							
B6 S-30-10-2.8	GJL 121 3001 R7102	1	0	2.2	4.0	10	0.180
B6 S-30-01-2.8	GJL 121 3001 R7012	0	1	2.2	4.0	10	0.180

### B 7 S Mini contactors for connection to PLCs ... with integrated protective circuit

Auxiliary switch blocks **cannot** be fitted later on !

<b>Motor contactors with screw connection, for DC operation 24 V / 1.7 W</b>							
B7 S-30-10-1.7	GJL 131 3001 R7101	1	0	3.0	5.5	10	0.180
B7 S-30-01-1.7	GJL 131 3001 R7011	0	1	3.0	5.5	10	0.180
<b>Motor contactors with screw connection, for DC operation 17...32 V / 2.8 W</b>							
B7 S-30-10-2.8	GJL 131 3001 R7102	1	0	3.0	5.5	10	0.180
B7 S-30-01-2.8	GJL 131 3001 R7012	0	1	3.0	5.5	10	0.180

6

# Mini contactor relays, interface contactor relays / mini contactor relays for connection to PLCs

## Ordering details



KC 6-40 E-P

SST 166 91 R

Type	Order code See Page 6/1 for adding code suffixes <input type="checkbox"/> .. <input type="checkbox"/> to the order code	Auxiliary switches		220 V 240 V A	AC-15 380 V 440 V A	500 V A	Packing unit piece	Weight per piece kg
		NO	NC					

### Mini contactor relays

#### Contactor relays, with screw connection, for AC operation, 3.5 VA

K 6-40 E	GJH 121 1001 R <input type="checkbox"/> 40 <input type="checkbox"/>	4	0	4	3	2	10	0.180
K 6-31 Z	GJH 121 1001 R <input type="checkbox"/> 31 <input type="checkbox"/>	3	1	4	3	2	10	0.180
K 6-22 Z	GJH 121 1001 R <input type="checkbox"/> 22 <input type="checkbox"/>	2	2	4	3	2	10	0.180

#### Contactor relays, with flat pin connection, for AC operation, 3.5 VA

K 6-40 E- F	GJH 121 1003 R <input type="checkbox"/> 40 <input type="checkbox"/>	4	0	4	3	2	10	0.170
K 6-31 Z- F	GJH 121 1003 R <input type="checkbox"/> 31 <input type="checkbox"/>	3	1	4	3	2	10	0.170
K 6-22 Z- F	GJH 121 1003 R <input type="checkbox"/> 22 <input type="checkbox"/>	2	2	4	3	2	10	0.170

#### Contactor relays, with soldering pins, for AC operation, 3.5 VA

K 6-40 E- P	GJH 121 1009 R <input type="checkbox"/> 40 <input type="checkbox"/>	4	0	4	3	2	10	0.170
K 6-31 Z- P	GJH 121 1009 R <input type="checkbox"/> 31 <input type="checkbox"/>	3	1	4	3	2	10	0.170
K 6-22 Z- P	GJH 121 1009 R <input type="checkbox"/> 22 <input type="checkbox"/>	2	2	4	3	2	10	0.170

#### Contactor relays, with screw connection, for DC operation, 3.5 W

KC 6-40 E	GJH 121 3001 R <input type="checkbox"/> 40 <input type="checkbox"/>	4	0	4	3	2	10	0.180
KC 6-31 Z	GJH 121 3001 R <input type="checkbox"/> 31 <input type="checkbox"/>	3	1	4	3	2	10	0.180
KC 6-22 Z	GJH 121 3001 R <input type="checkbox"/> 22 <input type="checkbox"/>	2	2	4	3	2	10	0.180

#### Contactor relays, with flat pin connection, for DC operation, 3.5 W

KC 6-40 E- F	GJH 121 3003 R <input type="checkbox"/> 40 <input type="checkbox"/>	4	0	4	3	2	10	0.170
KC 6-31 Z- F	GJH 121 3003 R <input type="checkbox"/> 31 <input type="checkbox"/>	3	1	4	3	2	10	0.170
KC 6-22 Z- F	GJH 121 3003 R <input type="checkbox"/> 22 <input type="checkbox"/>	2	2	4	3	2	10	0.170

#### Contactor relays, with soldering pins, for DC operation, 3.5 W

KC 6-40 E- P	GJH 121 3009 R <input type="checkbox"/> 40 <input type="checkbox"/>	4	0	4	3	2	10	0.170
KC 6-31 Z- P	GJH 121 3009 R <input type="checkbox"/> 31 <input type="checkbox"/>	3	1	4	3	2	10	0.170
KC 6-22 Z- P	GJH 121 3009 R <input type="checkbox"/> 22 <input type="checkbox"/>	2	2	4	3	2	10	0.170

### Interface contactor relays

Auxiliary switch blocks **cannot** be fitted later on !

#### Contactor relay, with screw connection, for DC operation, 24 V / 1.4 W

KC 6-40 E-1.4	GJH 121 3001 R 8401	4	0	4	3	2	10	0.180
KC 6-31 Z-1.4	GJH 121 3001 R 8311	3	1	4	3	2	10	0.180

#### Contactor relay, with flat pin connection, for DC operation, 24 V / 1.4 W

KC 6-40 E-F-1.4	GJH 121 3003 R 8401	4	0	4	3	2	10	0.180
KC 6-31 Z-F-1.4	GJH 121 3003 R 8311	3	1	4	3	2	10	0.180

#### Contactor relay, with soldering pins, for DC operation, 24 V / 1.4 W

KC 6-40 E-P-1.4	GJH 121 3009 R 8401	4	0	4	3	2	10	0.170
KC 6-31 Z-P-1.4	GJH 121 3009 R 8311	3	1	4	3	2	10	0.170

#### Contactor relay, with screw connection, for DC operation, 17 ... 32 V / 2.4 W

KC 6-40 E-2.4	GJH 121 3001 R 5401	4	0	4	3	2	10	0.180
KC 6-31 Z-2.4	GJH 121 3001 R 5311	3	1	4	3	2	10	0.180

#### Contactor relay, with flat pin connection, for DC operation, 17 ... 32 V / 2.4 W

KC 6-40 E-F-2.4	GJH 121 3003 R 5401	4	0	4	3	2	10	0.170
KC 6-31 Z-F-2.4	GJH 121 3003 R 5311	3	1	4	3	2	10	0.170

#### Contactor relay, with soldering pins, for DC operation, 17 ... 32 V / 2.4 W

KC 6-40 E-P-2.4	GJH 121 3009 R 5401	4	0	4	3	2	10	0.170
KC 6-31 Z-P-2.4	GJH 121 3009 R 5311	3	1	4	3	2	10	0.170

### K 6 S Mini contactor relays for connection to PLCs ... with integrated protective circuit

Auxiliary switch blocks **cannot** be fitted later on !

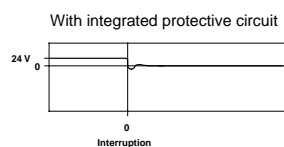
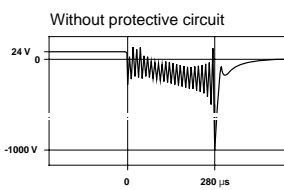
#### Contactor relay, with screw connection, for DC operation, 24 V / 1.7 W

K 6 S-40 E-1.7	GJH 121 3001 R 7401	4	0	4	3	2	10	0.180
K 6 S-31 Z-1.7	GJH 121 3001 R 7311	3	1	4	3	2	10	0.180
K 6 S-22 Z-1.7	GJH 121 3001 R 7221	2	2	4	3	2	10	0.180

#### Contactor relay, with screw connection, for DC operation, 17 ... 32 V / 2.8 W

K 6 S-40 E-2.8	GJH 121 3001 R 7402	4	0	4	3	2	10	0.180
K 6 S-31 Z-2.8	GJH 121 3001 R 7312	3	1	4	3	2	10	0.180
K 6 S-22 Z-2.8	GJH 121 3001 R 7222	2	2	4	3	2	10	0.180

#### Oscillograms



SST 016 91 K

SST 016 91 K

- Controlled directly by PLC
- Integrated protective circuit with diodes and additional surge suppressor
- Non-confusable coil connection
- You save time and money for additional external wiring



# Mini motor contactors TBC 7 Mini contactor relays TKC 6

Railway app.: extended coil operating range, technical data



TBC 7-30-10



TKC 6-40E

## Mini motor contactors TBC 7

Type	Order code See below for adding code suffixes □...□ to the order code	Auxiliary switch NO NC	AC-1 max.			Motor output AC-2/AC-3			Pack- ing unit piece	Weight per piece kg
			220 V	240 V	A	220 V	380 V	500 V		

### Motor contactors, with screw connection, for DC operation

TBC 7-30-10	GJL 131 3061 R □ 10 □	1	0	20	3	5,5	4	10	0.180
TBC 7-30-01	GJL 131 3061 R □ 01 □	0	1	20	3	5,5	4	10	0.180

## Mini contactor relays TKC 6

### Contactor relays, with screw connection, for DC operation

TKC 6-22Z	GJH 121 3061 R □ 22 □	2	2	6				10	0.180
TKC 6-31Z	GJH 121 3061 R □ 31 □	2	2	6				10	0.180
TKC 6-40E	GJH 121 3061 R □ 40 □	4	0	6				10	0.180

### Contactor relays, with flat pin connection, for DC operation

TKC 6-22Z-F	GJH 121 3063 R □ 22 □	2	2	6				10	0.180
TKC 6-31Z-F	GJH 121 3063 R □ 31 □	2	2	6				10	0.180
TKC 6-40E-F	GJH 121 3063 R □ 40 □	4	0	6				10	0.180

## Coil code numbers

### Coil voltage ranges

Example:

TBC 7-30-10	GJL 131 3061 R □ 10 □	1	0	20	3	5,5	4	10	0.180
-------------	-----------------------	---	---	----	---	-----	---	----	-------

17 ... 24 ... 32 V DC =	5 .. 1
50 ... 70 ... 90 V DC =	5 .. 5
77 ... 110 ... 143 V DC =	6 .. 2
140 ... 200 ... 260 V DC =	6 .. 8

## Coil data

Power consumption of coils

at  $U_{max}$  (20 °C): operate/hold  $\leq 5$  W

Reliable drop-out:  $\leq 0.2 \times U_c$  ( $U_c$  = Rated operating voltage)

Reliable pick-up:  $\geq U_{c \min}$



The voltages specified in the table are absolute limit values!  
It is not permitted to attach auxiliary switch blocks CA 6 or CAF 6.

## Technical data of TBC 7, TKC 6

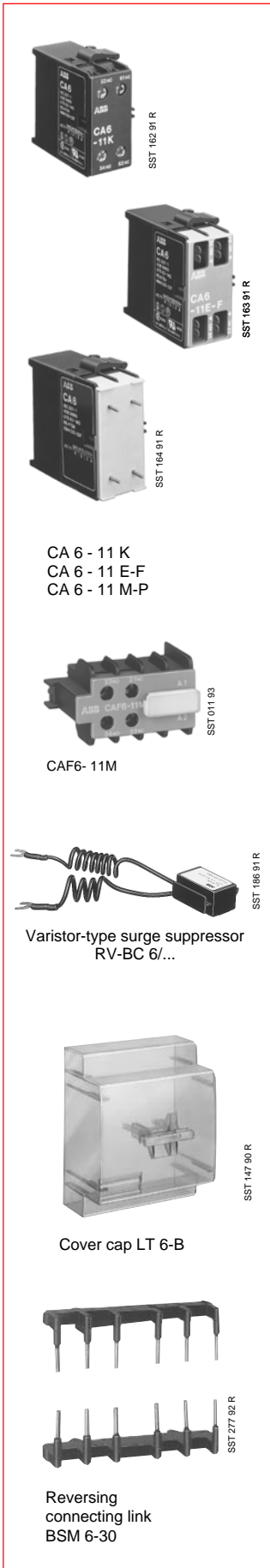
### Permissible ambient temperatures

including self-heating	°C	-30 ... +55
not including self-heating	°C	-30 ... +70
Storage temperature	°C	-40 ... +85

All other technical data and dimensions correspond to Types BC 7 and KC 6.

# Accessories for mini contactors

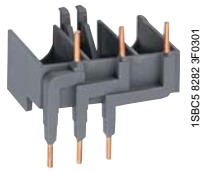
## Ordering details



Type	Order code	For mini contactor	Packing unit	Weight per piece
		Type	piece	kg
<b>Auxiliary switch blocks for mounting at one side (1)</b>				
CA 6-11K	GJL 120 1317 R 0001	<b>Screw connection</b> K6... and KC6...	10	0.030
CA 6-11E	GJL 120 1317 R 0002	B6(7)-40-00 and BC6(7)-40-00	10	0.030
CA 6-11M	GJL 120 1317 R 0003	B6(7)-30-10 and BC6(7)-30-10	10	0.030
CA 6-11N	GJL 120 1317 R 0004	B6(7)-30-01 and BC6(7)-30-01	10	0.030
CA 6-11K-F	GJL 120 1318 R 0001	<b>Flat pin connection</b> K6...F and KC6...F	10	0.030
CA 6-11E-F	GJL 120 1318 R 0002	B6(7)-40-00-F and BC6(7)-40-00-F	10	0.030
CA 6-11M-F	GJL 120 1318 R 0003	B6(7)-30-10-F and BC6(7)-30-10-F	10	0.030
CA 6-11N-F	GJL 120 1318 R 0004	B6(7)-30-01-F and BC6(7)-30-01-F	10	0.030
CA 6-11K-P	GJL 120 1319 R 0001	<b>Soldering connection</b> K6...P and KC6...P	10	0.030
CA 6-11E-P	GJL 120 1319 R 0002	B6(7)-40-00-P and BC6(7)-40-00-P	10	0.030
CA 6-11M-P	GJL 120 1319 R 0003	B6(7)-30-10-P and BC6(7)-30-10-P	10	0.030
CA 6-11N-P	GJL 120 1319 R 0004	B6(7)-30-01-P and BC6(7)-30-01-P	10	0.030
<b>Auxiliary switch blocks for mounting at front (1) Screw connection</b>				
CAF 6- 11K	GJL 120 1330 R 0001	K 6 and KC 6	10	0.035
CAF 6- 20K	GJL 120 1330 R 0005	K 6 and KC 6	10	0.035
CAF 6- 02K	GJL 120 1330 R 0009	K 6 and KC 6	10	0.035
CAF 6- 11E	GJL 120 1330 R 0002	B(C)6-, B(C)7-40-00, VB(C)...(A)	10	0.035
CAF 6- 20E	GJL 120 1330 R 0006	B(C)6-, B(C)7-40-00, VB(C)...(A)	10	0.035
CAF 6- 02E	GJL 120 1330 R 0010	B(C)6-, B(C)7-40-00, VB(C)...(A)	10	0.035
CAF 6- 11M	GJL 120 1330 R 0003	B(C)6-, B(C)7-30-10, VB(C)...(A)	10	0.035
CAF 6- 20M	GJL 120 1330 R 0007	B(C)6-, B(C)7-30-10, VB(C)...(A)	10	0.035
CAF 6- 02M	GJL 120 1330 R 0011	B(C)6-, B(C)7-30-10, VB(C)...(A)	10	0.035
CAF 6- 11N	GJL 120 1330 R 0004	B(C)6-, B(C)7-30-01, VB(C)...(A)	10	0.035
CAF 6- 20N	GJL 120 1330 R 0008	B(C)6-, B(C)7-30-01, VB(C)...(A)	10	0.035
CAF 6- 02N	GJL 120 1330 R 0012	B(C)6-, B(C)7-30-01, VB(C)...(A)	10	0.035
<b>Base with soldering pins, I<sub>th</sub> &lt; 8 A</b>				
LB 6	GJL 120 1902 R 0001	For mini contactors B, BC, K, KC	10	0.014
LB 6-CA	GJL 120 1903 R 0001	For 2-pole auxiliary switch blocks	10	0.006
<b>Plunger</b>				
BN 6	GJL 120 1904 R 0001	For manual operation	50	0.060
<b>Function marker</b>				
BA 50	FPTN 472 625 R 0001	50 clip-on label carriers 50 transparent covers 60 non-adhesive labels* 75 self-adhesive labels* (* on sheet)	1 bag	0.100
<b>Varistor-type surge suppressors for protective circuit of the DC contactors BC 6, BC 7 and KC 6</b>				
<i>Note:</i> Mini contactors for AC operation have an integrated protective circuit.				
RV-BC6/60	GHV 250 1902 R 0002	24–60 V. with cable lug	10	0.004
RV-BC6-F/60	GHV 250 1902 R 0003	24–60 V. flat pin, 2.8 mm	10	0.004
RV-BC6/250	GHV 250 1903 R 0002	50–250 V. with cable lug	10	0.004
RV-BC6-F/250	GHV 250 1903 R 0003	50–250 V. flat pin, 2.8 mm	10	0.004
RV-BC6/380	GHV 250 1904 R 0002	380 V. with cable lug	10	0.004
RV-BC6-F/380	GHV 250 1904 R 0003	380 V. flat pin, 2.8 mm	10	0.004
<b>Cover cap, transparent, sealable, enclosure IP 20</b>				
LT 6- B	GJL 120 1906 R 0001	for contactors B, BC, K, KC 6 with screw connection	10	0.001
<b>Reversing connecting link</b>				
BSM 6-30	GJL 120 1908 R 0001	for compact reversing contactors, VB..., VBC... with screw connection, cross-section 1.8 mm <sup>2</sup>	10	0.010
<b>Parallel connecting link</b>				
LP 6	GJL 120 1907 R 0001	for contactors B, BC, with screw connexion, 1 mm thick	100	0.001

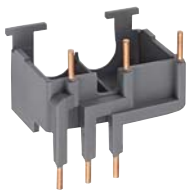
(1) Auxiliary switches CA 6 and CAF 6 may not be fitted simultaneously.

# BEA 7... connecting link for mini contactors and manual motor starters



BEA 7/116

1SBC5 8282 3F0301



BEA 7/325

1SBC5 8279 3F0301



B6-30-10 + BEA 7/116 + MS 116  
DOL Starter combination

1SBC5 8285 4F0301

## Application

The **BEA 7...** connecting link is used for direct linking between a mini contactor (or a compact reversing contactor) and the associated manual motor starter which are used together as **DOL Starter Combination** (or Reversing / DOL Starter Combination) in type 1 or type 2 coordination, complying with IEC 60947-4-1 and EN 60947-4-1.

See Database of coordination tables on the ABB Website:

[www.abb.com/lowvoltage](http://www.abb.com/lowvoltage) then go to the right menu select: "Support" select: "Online Product Selection Tools".

## Description

The **BEA 7...** insulated 3-pole connecting link (touch safe) ensures the electrical linking between the mini contactor (or compact reversing contactor) and the corresponding manual motor starter.

The **BEA 7...** connecting link can be used with the **B6/B7...** mini contactors and **VB6A/VB7A...** compact reversing contactors (including BC6/BC7..., VBC6A/VBC7A... versions) and the **MS...** manual motor starters as indicated in the table below.

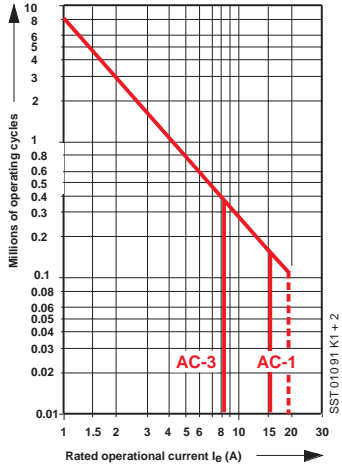
## Ordering details

For mini contactors and compact reversing contactors	For MMS	fixing Rail not supplied	I <sub>e</sub> max. AC-3 400 V A	Type	Order code	Pack <sup>ing</sup> pieces	Weight kg
B 6, VB 6A	MS 116		8	BEA 7/116	1SBN 08 0906 R1000	10	0.013
B 7, VB 7A	MS 116		11	BEA 7/116	1SBN 08 0906 R1000	10	0.013
B 6, VB 6A	MS 325		8	BEA 7/325	1SBN 08 0906 R1001	10	0.021
B 7, VB 7A	MS 325		11	BEA 7/325	1SBN 08 0906 R1001	10	0.021

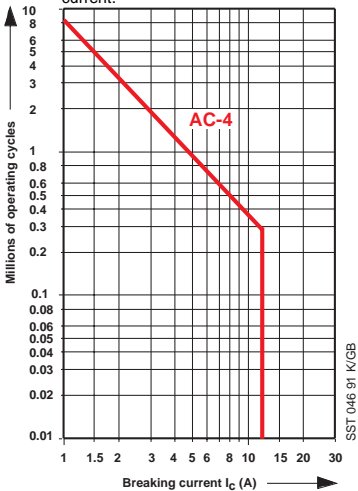
# Mini contactors B 6, BC 6 Mini contactor relays K 6, KC 6

Technical data to IEC 60947-4-1, IEC 60947-5-1

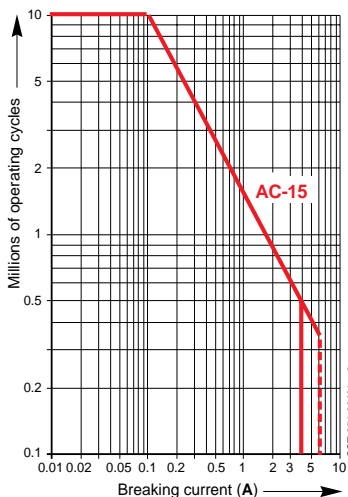
**Utilisation category AC-1/AC-3**  
Contact member service life curves  
B 6, BC 6, B 6S



**Utilisation category AC-4**  
Switching a 3-phase squirrel-cage induction motor and switching off the starting current.  
Switch-off current  $I_c$  at AC-4 corresponds to 6 times the motor's rated operating current.



**Utilisation category AC-15**  
Contact member service life curves  
K 6, KC 6, CA 6, CAF 6



## General data

<b>Rated insulation voltage <math>U_i</math></b>	V	690
<b>Permissible ambient temperature</b>		
Contactor without overload relay	°C	-25 ... +55
Contactor with overload relay	°C	-25 ... +50
Storage temperature	°C	-40 ... +80
<b>Climatic resistance</b>	to DIN 50 017 to UTE C 63-100	Resistant to changeable climates KFW, 30 cycles Version I
<b>Mounting position</b>		any

## Main contacts

<b>Mechanical service life</b>	10 million operations				
<b>Electrical service life</b>	see curves				
<b>Max. switching frequency AC-1</b>	ops./h	300			
DC-1, DC-3, DC-5, AC-2, AC-3, AC-15, DC-13	ops./h	600			
<b>Rated operating voltage <math>U_e</math></b>	V AC	12 to 690			
<b>Rated operating current <math>I_e</math>/AC-1, AC-3 and max. motor output / AC-3 at <math>U_e</math></b>		<b>AC-1 / <math>I_e</math> A</b>	<b>AC-2, AC-3</b>		
		55 °C	40 °C	$I_e$ A	
				P kW	
	220/240 V	16	16	9	2.2
	<b>380/440 V</b>	<b>16</b>	<b>16</b>	<b>9/8</b>	<b>4.0</b>
	500 V	12	12	5.5	3.0
	690 V	6	12	3.5	3.0

<b>Switching times</b>		<b>B 6</b>	<b>B C6</b>	<b>K 6</b>	<b>K C6</b>
Closing delay	NO	14 to 26		14 to 26	
Opening delay		16 to 40	4 to 10	16 to 40	4 to 10
Closing delay	NC	18 to 42		18 to 42	
Opening delay		14 to 26		14 to 26	

<b>Shock resistance</b> with normal installation position	Semi-sinusoidal shock, 10 ms: with no change in contact state				
Shock resistance	<b>A</b>	<b>B1</b>	<b>B2</b>	<b>C1</b>	<b>C2</b>
Contactors switched off	20 g	20 g	20 g	20 g	20 g
Contactors switched on	10 g	20 g	20 g	20 g	20 g

<b>Power loss per pole:</b>	2 W at 20 A
<b>Back-up fuse, Type gL, Type 1, Type 2</b>	20 A, 20 A

## Auxiliary contacts: integrated, CA 6, CAF 6, K 6, KC 6, K 6S

<b>Rated operating voltage <math>U_e</math></b>	V DC	12 to 240	
	V AC	12 to 500	
<b>Conventional thermal continuous current <math>I_{th}</math></b>	A	6	
<b>Back-up fuse, Type gG</b>	A	10	
<b>Rated operating current <math>I_e</math> / AC-15</b>			
at $U_e$	24-240 V	A	4
	380/440 V	A	3
	500 V	A	2
<b>Rated operating current <math>I_e</math> / DC-13</b>			
at $U_e$	24 V	A	1.5
	60 V	A	0.5
	110 V	A	0.4
	220/240 V	A	0.04

<b>Min. making/breaking capacity of the auxiliary contacts</b>	$\geq 17$ V and $\geq 5$ mA
--	-----------------------------

## Solenoid coils

<b>Rated power</b>		closing / holding			
Basic contactors					
B 6 / K 6, VB 6	AC	VA	3.5		
BC 6 / KC 6, VBC 6	DC	W	3.5		
Interface contactors					
BC 6 / KC 6-1.4	DC 24 V	W	1.4		
BC 6 / KC 6-2.4	DC 17 ... 32 V	W	2.4		
Mini contactor for connection to PLCs, mini contactor relay for connection to PLCs			<b>cold</b>	<b>warm</b>	
			<b>I mA</b>	<b>P W</b>	<b>I mA</b> <b>P W</b>
B 6 NO-1.7, K 6S-1.7	DC 24 V	W	77	1.75	60   1.35
B 6 NO-2.8, K 6S-2.8	DC 17 ... 32 V	W	125	2.80	94   2.10

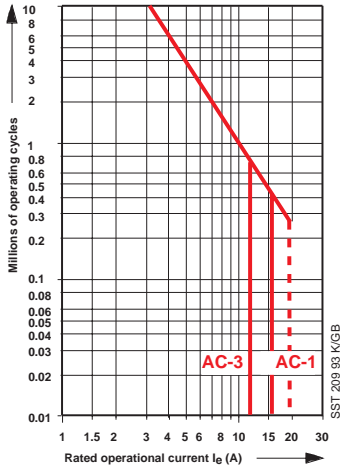
<b>Coil voltage range</b>	0.85 ... 1.1x $U_e$
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Switching DC, see overleaf

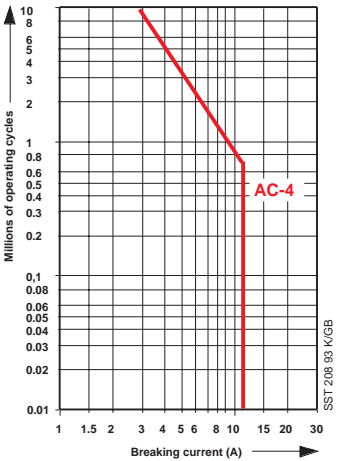
# Mini contactors B 7, BC 7

## Technical data to IEC 60947-4-1

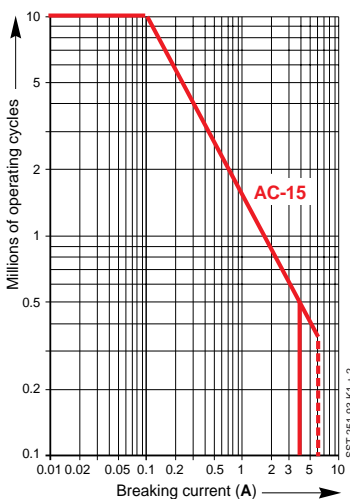
**Utilisation category AC-1/AC-3**  
Contact member service life curves  
B 7, BC 7, B 7S



**Utilisation category AC-4**  
Switching a 3-phase squirrel-cage induction motor and switching off the starting current.  
Switch-off current  $I_c$  at AC-4 corresponds to 6 times the motor's rated operating current



**Utilisation category AC-15**  
Contact member service life curves  
K 6, KC 6, CA 6, CAF 6



### General data

<b>Rated insulation voltage <math>U_i</math></b>	V	690
<b>Permissible ambient temperature</b>		
Contactor without overload relay	°C	-25 ... +55
Contactor with overload relay	°C	-25 ... +50
Storage temperature	°C	-40 ... +80
<b>Climatic resistance</b>	to DIN 50 017 to UTE C 63-100	Resistant to changeable climates KFW, 30 cycles Version 1
<b>Mounting position</b>		any

### Main contacts

<b>Mechanical service life</b>	10 million operations			
<b>Electrical service life</b>	see curves			
<b>Max. switching frequency AC-1</b>	ops./h	300		
DC-1, DC-3, DC-5, AC-2, AC-3, AC-15, DC-13	ops./h	600		
<b>Rated operating voltage <math>U_e</math></b>	V AC	12 to 690		
<b>Rated operating current <math>I_e</math> / AC-1, AC-3 and motor output / AC-3</b>		<b>AC-1 / <math>I_e</math> A</b>	<b>AC-2, AC-3</b>	
at $U_e$		55 °C	40 °C	$I_e$ A    P kW
	220/240 V	16	20	12    3
	<b>380/440 V</b>	<b>16</b>	<b>20</b>	<b>12/11    5.5</b>
	500 V	12	12	7    4
	690 V	6	12	3.5    3

### Switching times

			<b>B 7</b>	<b>BC 7</b>
Closing delay	NO	ms	14 to 26	
Opening delay		ms	16 to 40	4 to 10
Closing delay	NC	ms	18 to 42	6 to 12
Opening delay		ms	14 to 26	

### Shock resistance with normal installation position

	Semi-sinusoidal shock, 10 ms, with no change in contact state				
<b>Shock direction</b>	<b>A</b>	<b>B1</b>	<b>B2</b>	<b>C1</b>	<b>C2</b>
Contactors switched off	20 g	20 g	20 g	20 g	20 g
Contactors switched on	10 g	20 g	20 g	20 g	20 g

### Power loss per pole:

	2 W at 20 A
<b>Back-up fuse assignment type</b>	Type 1
<b>Type gG (gL)</b>	Type 2
	25 A
	20 A

### Auxiliary contacts: integrated

<b>Minimum making/breaking</b>	≥ 17 V    ≥ 5 mA
--------------------------------	------------------

### Solenoid coils

<b>Rated power</b>		Closing / holding				
Basic contactors						
B 7 / VB 7	AC	VA	3.5			
BC 7 / VBC 7	DC	W	3.5			
Interface contactors						
BC 7-1.4	DC 24 V	W	1.4			
BC 7-2.4	DC 17 ... 32 V	W	2.4			
Mini contactor for connection to PLCs			cold		warm	
			<b>I (mA)</b>	<b>P (W)</b>	<b>I (mA)</b>	<b>P (W)</b>
B 7 NO-1.7	DC	24 V	77	1.70	60	1.35
B 7 NO-2.8	DC	17 ... 32 V	125	2.80	94	2.10
<b>Coil voltage range</b>	0.85...1.1x $U_c$					

### Utilisation categories for B 6 and B 7

Utilisation category			DC-1 L/R < 1 ms	DC-3 L/R < 2 ms	DC-5 L/R < 7.5 ms
 A 829	24 V	A	16.0	16.0	16.0
	48 V	A	16.0	8.0	2.0
	60 V	A	16.0	4.0	1.25
	110 V	A	7.0	1.5	0.4
	220 V	A	0.8	0.25	0.20
 A 830	24 V	A	16.0	16.0	16.0
	48 V	A	16.0	16.0	16.0
	60 V	A	16.0	15.0	12.0
	110 V	A	16.0	7.0	2.0
	220 V	A	5.0	1.5	0.5
 A 831	24 V	A	16.0	16.0	16.0
	48 V	A	16.0	16.0	16.0
	60 V	A	16.0	16.0	16.0
	110 V	A	16.0	15.0	8.0
	220 V	A	14.0	4.0	2.0

6

# Mini motor contactors B 6, B 7 / BC 6, BC 7

## Compact reversing contactors VB 6(7) / VBC 6(7)

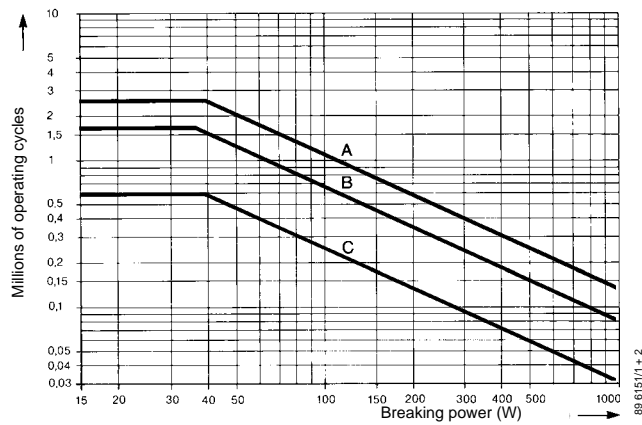
### Contact member service life, utilisation categories

#### Contact member service life for utilisation categories DC-1, DC-3, DC-5

The following curves show the contact member service life for utilisation categories DC-1, DC-3 and DC-5 for 3 poles in series. If only one current path is used, the service life read off for the related breaking capacity must be multiplied by **0.33**, and, if there are 2 current paths, it must be multiplied by **0.66**.

The time constants L/R (ms) which differ for the individual utilisation categories have been allowed for on the curves.

A = 3 poles in series DC-1  
B = 3 poles in series DC-3  
C = 3 poles in series DC-5



# Mini contactors B 6, B 7 / BC 6, BC 7

## Compact reversing contactors VB 6 (7) / VBC 6 (7)

### Switching lamp loads

#### Switching lamp loads

The following table shows the number of lamps which can be connected per circuit at 230 V/50 Hz. Please note the following:

If the specified capacitor load is exceeded, this may result in admissibly high peak inrush currents. Other factors which influence the magnitude of peak inrush currents are as follows:

- Length and cross-section of installed supply cables
- Type of electronic ballast units
- Lamp make

The following lamp load table thus contains non-binding guideline values.

Lamp type	Lamp data		Permissible number of lamps per circuit (230 V, 50 Hz) in the case of contactor type <b>B6, B7, BC6, BC7</b>	Capacitor load in $\mu\text{F}$
	Watt	$I_n$ A		
Incandescent lamps	60	0.26	20	
	100	0.43	12	
	200	0.87	6	
	300	1.30	4	
	500	2.17	2	
	1000	4.35	1	
Fluorescent lamps	<b>p.f. uncorrected and series p.f. correction</b>			
	15	0.33	25	
	20	0.37	23	
	40	0.43	20	
	58	0.67	16	
	65	0.67	12	
	115	1.5	5	
	140	1.5	5	
	<b>Lead-lag circuit</b>			
	2 x 20	2 x 0.13	2 x 26	Lamp pairs
	2 x 40	2 x 0.22	2 x 20	
	2 x 58	2 x 0.32	2 x 16	
	2 x 65	2 x 0.34	2 x 12	
2 x 115	2 x 0.65	2 x 5		
2 x 140	2 x 0.75	2 x 5		
<b>Parallel p.f. correction</b>				
15	0.11	7	4.5	
20	0.13	6	4.5	
40	0.22	7	4.5	
58	0.32	5	7	
65	0.34	4	7	
115	0.65	1	18	
140	0.75	1	18	
High-pressure mercury-vapour lamps e.g. HQL, HPL	<b>p.f. uncorrected</b>			
	50	0.61	10	
	80	0.8	7	
	125	1.15	5	
	250	2.15	3	
	400	3.25	2	
	700	5.40	1	
	<b>Parallel p.f. correction</b>			
	50	0.28	4	7
	80	0.41	3	8
	125	0.65	2	10
	250	1.22	1	18
	400	1.95	1	25
	700	3.45	–	45
	1000	4.8	–	60
Lamps with electronic ballast units	1 x 18	–	17	
	2 x 18	–	8	
	1 x 36	–	11	
	2 x 36	–	6	
	1 x 56	–	11	
	2 x 58	–	6	

Lamp type	Lamp data		Permissible number of lamps per circuit (230 V, 50 Hz) in the case of contactor type <b>B6, B7, BC6, BC7</b>	Capacitor load in $\mu\text{F}$
	Watt	$I_n$ A		
Metal-halogen lamps e.g. HQL, HPI	<b>p.f. uncorrected</b>			
	35	0.53	10	
	70	1	5	
	150	1.8	3	
	250	3	2	
	400	3.5	1	
<b>Parallel p.f. correction</b>				
35	0.25	6	6	
70	0.45	3	12	
150	0.75	1	20	
250	1.5	1	33	
400	2.5	1	35	
Low-pressure sodium-vapour lamps	<b>p.f. uncorrected</b>			
	35	1.5	4	
	55	1.5	4	
	90	2.4	2	
	135	3.5	2	
	150	3.3	2	
	180	3.3	2	
	200	2.3	2	
	<b>Parallel p.f. correction</b>			
	35	0.31	–	20
55	0.42	–	20	
90	0.63	–	30	
135	0.94	–	45	
150	1.0	–	40	
180	1.16	–	40	
200	1.32	–	25	
High-pressure sodium-vapour lamps	<b>p.f. uncorrected</b>			
	150	1.8	3	
	250	3.0	2	
	330	3.7	2	
	400	4.7	1	
	<b>Parallel p.f. correction</b>			
	150	0.83	–	20
	250	1.5	–	33
330	2.0	–	40	
400	2.4	–	48	
1000	6.3	–	106	
Transformers for halogen low-volt lamps	Transformers power		Permissible number of transformers per circuit (230 V, 50 Hz) in the case of contactor type <b>B6, B7, BC6, BC7</b>	
	Watt			
	20		40	
	50		20	
	75		13	
	100		10	
	150		7	
200		5		
300		3		

# Thermal overload relay T 7 DU for mini contactors

## Ordering details, technical data



SST 002 98

Thermal overload relay T 7 DU



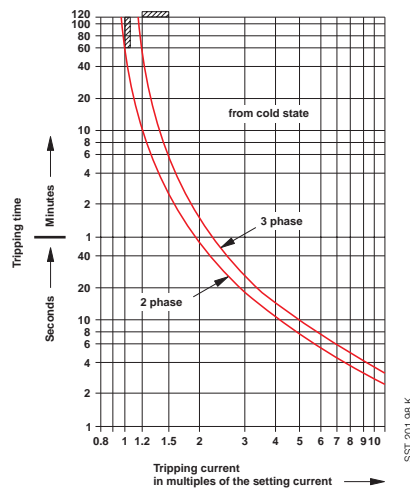
SST 001 98

Thermal overload relay T 7 DU mounted onto a mini contactor B 7-30-01

Type	Order code	Setting range A ... A	Max. fuse		Pack. unit piece	Weight kg
			aM A	gL A		
<b>Thermal overload relay T 7 DU for mini contactors B 6, BC 6, B 6S, BC 6, VB 6, VBC 6, B 7, BC 7, B7S, BC 7, VB 7, VBC 7</b>						
T 7 DU 0.16	1SAZ 111 301 R 0001	0.10 ... 0.16		0.5	1	0.070
T 7 DU 0.24	1SAZ 111 301 R 0002	0.16 ... 0.24		1,0	1	0.070
T 7 DU 0.4	1SAZ 111 301 R 0003	0.24 ... 0.40		2,0	1	0.070
T 7 DU 0.6	1SAZ 111 301 R 0004	0.40 ... 0.60		2,0	1	0.070
T 7 DU 1.0	1SAZ 111 301 R 0005	0.60 ... 1.00		4,0	1	0.070
T 7 DU 1.6	1SAZ 111 301 R 0006	1.00 ... 1.60		6,0	1	0.070
T 7 DU 2.4	1SAZ 111 301 R 0007	1.60 ... 2.40		6,0	1	0.070
T 7 DU 4.0	1SAZ 111 301 R 0008	2.40 ... 4.00		10,0	1	0.070
T 7 DU 6.0	1SAZ 111 301 R 0009	4.00 ... 6.00		10,0	1	0.070
T 7 DU 9.0	1SAZ 111 301 R 0010	6.00 ... 9.00		10,0	1	0.070
T 7 DU 12.0	1SAZ 111 301 R 0011	9.00 ... 12.00		20,0	1	0.070

### Tripping curve

The tripping characteristic is the value at 20°C ambient temperature from cold state. The tripping time is dependent on the operating current. By operating in a warm state the tripping time of the overload relay approximately is reduced by 1/4 of the relevant value in cold state.



SST 201 98 K

Time-current curves (mean values), for thermal overload relay T 7 DU, 0.1 ... 12 A.

>> Full Description and Technical Data ..... section 5  
>> Approvals ..... section 6

>> Terminal marking and positioning ..... section 8  
>> Dimensions ..... section 9



# Thermal overload relay T 7 DU for mini contactors

## Technical data

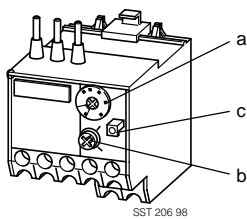
### Technical data




<b>Rated insulation voltage</b>	$U_i$	690 V
<b>Permissible ambient temperature</b>	°C	-25 ... +50 open temperature-compensated
<b>Storage temperature</b>	°C	-40 ... +70
<b>Mounting position</b>		±30° referred to vertical mounting position not horizontal, not upside down, 5 mm lateral clearance for side-by-side mounting
<b>Switching frequency</b> with avoidance of premature tripping	max. ops./h	15
≤ 40 % relative duty	max. ops./h	60 (if 6 x $I_n$ starting time ≤ 1s)

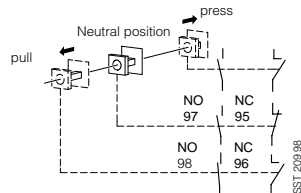
### Load rating of auxiliary contacts

		NC 95-96	NO 97-98
<b>Rated operating voltage</b> $U_e$	V	500	500
<b>Thermal continuous current</b>	A	6	6
<b>Rated operating voltage</b> $I_e$ at AC-15 220 to 240 V	A	1.5	1.5
at AC-15 380 to 415 V	A	0.7	0.5
at AC-15 to 500 V	A	0.5	0.3
In the case of DC-15 220 V	A	0.2	0.2
<b>Short-circuit protection</b>	gL A	4	4

### Setting options

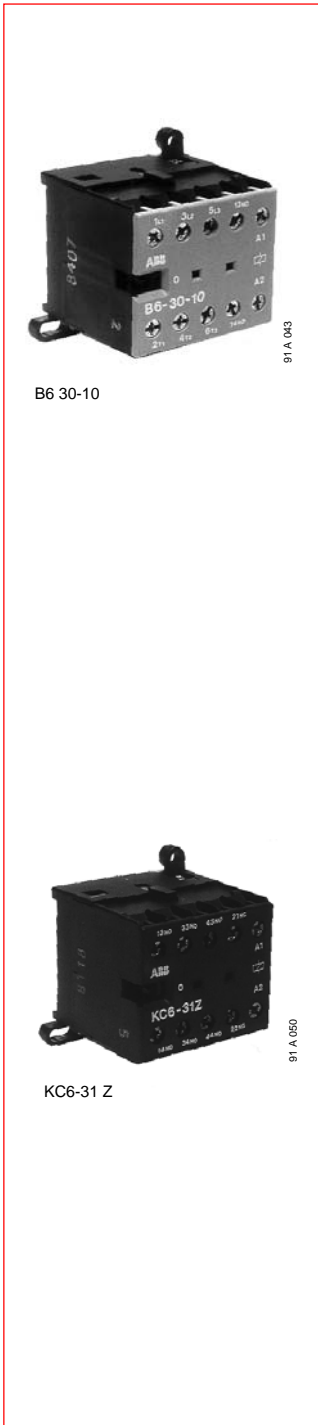


- a  **Setting knob** for motor rated current
- b  **Reset:** Manual "manual reset"  
**Position A:** Auto "without manual reset"  
**Position H:** Reset off
- c  **Test knob**



# Mini motor contactors, mini contactor relays Thermal overload relay

## Approvals



The following equipment has been approved or approval has been requested in those countries and classification societies where approval is mandatory. For some countries, special versions of equipment are available. When a supplier of a control unit incorporates approved equipment, this does not exempt him from his obligation to implement the overall installation in accordance with the legal local requirements of the country involved.

### Approvals

Test marks  
Abbreviation  
Validity



#### Mini motor contactors

B6./ B7..	■	■	■	■	■	■	■	■	■
B6/B7..-F	■	■	□	■	■	■	■	■	■
B6/B7..-P	■	■	□	■	■	■	■	■	■
BC6/BC 7..	■	■	■	■	■	■	■	■	■
BC6/BC 7..-F	■	■	□	■	■	■	■	■	■
BC6/BC7..-P	■	■	□	■	■	■	■	■	■
BC6/BC7..-1.4	■	■	■	■	■	■	■	■	■
BC6/BC7..-F-1.4	■	■	■	■	■	■	■	■	■
BC6/BC7..-P-1.4	■	■	■	■	■	■	■	■	■
BC6/BC7..-2.4	■	■	■	■	■	■	■	■	■
BC6/BC7..-F-2.4	■	■	■	■	■	■	■	■	■
BC6/BC7..-P-2.4	■	■	■	■	■	■	■	■	■
B 6 S/B7 S	■	■	■	■	■	■	■	■	■

#### Compact reversing contactors

VB6/VB7..	■	■	□	■	■	■	■	■	■
VBC 6/VBC7	■	■	■	■	■	■	■	■	■

#### Thermal overload relay

T 7 DU	■	■	■	■	■	■	■	■	■
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#### Mini contactor relays

K6..	■	■	■	■	■	■	■	■	■
K6..-F	■	■	■	■	■	■	■	■	■
K6..-P	■	■	■	■	■	■	■	■	■
KC6..	■	■	■	■	■	■	■	■	■
KC6..-F	■	■	■	■	■	■	■	■	■
KC6..-P	■	■	■	■	■	■	■	■	■
KC6..-1.4	■	■	■	■	■	■	■	■	■
KC6..-F-1.4	■	■	■	■	■	■	■	■	■
KC6..-P-1.4	■	■	■	■	■	■	■	■	■
KC6..-2.4	■	■	■	■	■	■	■	■	■
KC6..-F-2.4	■	■	■	■	■	■	■	■	■
KC6..-P-2.4	■	■	■	■	■	■	■	■	■

#### Accessories

CA6-11..	■	■	■	■	■	■	■	■	■
CAF6..	■	■	■	■	■	■	■	■	■
LB6	■	■	■	■	■	■	■	■	■
LB6-CA	■	■	■	■	■	■	■	■	■

■ Normal version approved; rating plates bear the test mark if mandatory.

□ Submitted for approval

### Motor rating and rated operating currents in accordance with CSA and UL for contactors B(C)6 and B(C) 7, in addition to contactor relays K(C)6.

In the case of CSA and UL, the contactors are approved both for "Motor rating 3-phase" and for "AMP rating". For this reason, the permissible ratings for contactors are approved either for "hp" or "Amp rating", with an assigned rated current

#### Motor rating 3-phase for contactors B(C)6:

Rated operating voltage	$U_e$ ~ (V)	110/120 V	220/240 V	440/480 V	540/600 V
Motor output 3-phase	P (hp)	1	2	1	1
	$I_e$ (A)	7.2	6.8	1.8	1.4
Motor output Single-phase	P (hp)	1	2	—	—
	$I_e$ (A)	16	12	—	—

**Amp-rating:** – 12 A-300 V, AC for the main contacts of contactors B(C)6

5 A-600 V, AC pilot duty A 600 for incorporated auxiliary contacts B(C)6, K(C)6 and B(C)7, in addition to attachable auxiliary switch blocks CA6. Values for 220 ... 208 V = (220 ... 240 V) x 1.15

respectively. The approved values for the individual contactors and contactor relays are given in the table below. The determining factor is the data indicated on the units as shown on the following table

#### Motor rating-3-phase for contactors B(C)7 :

Rated operating voltage	$U_e$ ~ (V)	110/120 V	220/240 V	440/480 V	540/600 V
Motor output 3-phase	P (hp)	1	3	5	5
	$I_e$ (A)	7.2	9.6	7.6	6.1
Motor output Single-phase	P (hp)	0.5	1	2	2
	$I_e$ (A)	9.8	16	6	4.8

**Amp-rating:** – 12 A-600 V, AC for the main contacts of contactors B(C)7

# Notes

