





**Mini contactors B6/4 kW;  
B7/5.5 kW**

**Mini contactor relays K..**

**Compact reversing contactors VB..**

**Thermal overload relay T7DU**

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## Coil voltages for mini contactors

**B6, B7, VB6(A), VB7(A), BC6, BC7, VBC6(A), VBC7(A), K6, KC6.**

<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>e</sub>

# Mini contactors B6, BC6, B7, BC7

## Ordering details



B6-30-10

SST 158 91 R



BC6-30-10-F

SST 159 91 R



B6-30-10-P

SST 161 91 R



B7-30-10

SST 158 91 APS



B7-40-00

SST 110 93 R



B7-40-00 with auxiliary switch CAF6-11 screwed on afterwards

SST 009 93 R

Type	Order code See Page 3 for adding code suffixes ☆..☆ to the order code	Auxiliary switches		Motor output	AC2...3	Price per piece	Packing unit piece	Weight per piece kg
		NO	NC	220 V 240 V kW	380 V 440 1V kW			

### Mini contactors B6

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

B6-30-10	GJL 121 1001 R ☆ 10 ☆	1	0	2.2	4		10	0.180
B6-30-01	GJL 121 1001 R ☆ 01 ☆	0	1				10	0.180
B6-40-00	GJL 121 1201 R ☆ 00 ☆	0	0				10	0.180

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

B6-30-10-F	GJL 121 1003 R ☆ 10 ☆	1	0	2.2	4		10	0.170
B6-30-01-F	GJL 121 1003 R ☆ 01 ☆	0	1				10	0.170
B6-40-00-F	GJL 121 1203 R ☆ 00 ☆	0	0				10	0.170

#### Mini contactors, with soldering pins, for AC operation, 3.5 VA, I<sub>n</sub> < 8 A

B6-30-10-P	GJL 121 1009 R ☆ 10 ☆	1	0	2.2	4		10	0.170
B6-30-01-P	GJL 121 1009 R ☆ 01 ☆	0	1				10	0.170

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

BC6-30-10	GJL 121 3001 R ☆ 10 ☆	1	0	2.2	4		100	0.180
BC6-30-01	GJL 121 3001 R ☆ 01 ☆	0	1				10	0.180

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

BC6-30-10-F	GJL 121 3003 R ☆ 10 ☆	1	0	2.2	4		10	0.170
BC6-30-01-F	GJL 121 3003 R ☆ 01 ☆	0	1				10	0.170

#### Mini contactors, with soldering pins, for DC operation, 3.5 W, I<sub>n</sub> < 8 A

BC6-30-10-P	GJL 121 3009 R ☆ 10 ☆	1	0	2.2	4		10	0.170
BC6-30-01-P	GJL 121 3009 R ☆ 01 ☆	0	1				10	0.170

### Mini contactors B7

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

B7-30-10	GJL 131 1001 R ☆ 10 ☆	1	0	3.0	5.5		10	0.180
B7-30-01	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

B7-30-10-F	GJL 131 1003 R ☆ 10 ☆	1	0	3.0	5.5		10	0.170
B7-30-01-F	GJL 131 1003 R ☆ 01 ☆	0	1				10	0.170
B7-40-00-F	GJL 131 1203 R ☆ 00 ☆	0	0				10	0.170

#### Mini contactors, with soldering pins, for AC operation, 3.5 VA, I<sub>n</sub> < 8 A

B7-30-10-P	GJL 131 1009 R ☆ 10 ☆	1	0	3.0	5.5		10	0.170
B7-30-01-P	GJL 131 1009 R ☆ 01 ☆	0	1				10	0.170

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

BC7-30-10	GJL 131 3001 R ☆ 10 ☆	1	0	3.0	5.5		10	0.180
BC7-30-01	GJL 131 3001 R ☆ 01 ☆	0	1				10	0.180

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

BC7-30-10-F	GJL 131 3003 R ☆ 10 ☆	1	0	3.0	5.5		10	0.170
BC7-30-01-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

B7D-30-10	GJL 131 7001 R 0101	1	0	3.0	5.5		10	0.170
B7D-30-01	GJL 131 7001 R 0011	0	1				10	0.170
B7D-40-00	GJL 131 7201 R 0001	0	0				10	0.170

#### Mini contactors, with soldering pins, for DC operation, 3.5 W, I<sub>n</sub> < 8 A

BC7-30-10-P	GJL 131 3009 R ☆ 10 ☆	1	0	3.0	5.5		10	0.170
BC7-30-01-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

B7D-30-10	GJL 131 7001 R 0105	1	0	3.0	5.5		10	0.170
B7D-30-01	GJL 131 7001 R 0015	0	1				10	0.170
B7D-40-00	GJL 131 7201 R 0005	0	0				10	0.170

# Compact reversing contactors

## Ordering details

### Compact reversing contactors VB6, VB7 and VB6A, VB7A

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:**

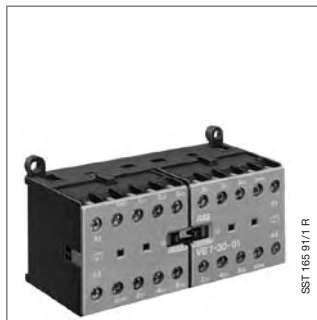
- VB6 resp. VB7: normal interlock
- VB6A resp. VB7A: interlock with mechanical safety blocking function

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.

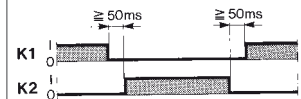
Safety blocking means that the contactor to be switched on is locked mechanically in OFF condition owing to the switch-on signal issued too early, and this state is retained until the blocking function is cancelled again as follows:

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.



VB7-30-01



When the direction of rotation is changed, both contactor coils of VB6A, VB7A have to be deenergized for more than 50 ms.

Type	Order code See Page 3 for adding code suffixes ☆.☆ to the order code	Auxiliary switches		Motor output AC2...3		Price per piece	Pack- ing unit piece	Weight per piece kg
		NO	NC	max. 220 V 240 V kW	<b>380 V</b> <b>440 V</b> <b>kW</b>			

### Compact reversing contactors VB6, VBC6, with mechanical interlock

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

<b>VB6-30-10</b>	<b>GJL 121 1901 R ☆ 10 ☆</b>	1	0	2.2	<b>4</b>	5	0.340
<b>VB6-30-01</b>	<b>GJL 121 1901 R ☆ 01 ☆</b>	0	1			5	0.340

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

<b>VB6-30-10-F</b>	<b>GJL 121 1903 R ☆ 10 ☆</b>	1	0	2.2	<b>4</b>	5	0.340
<b>VB6-30-01-F</b>	<b>GJL 121 1903 R ☆ 01 ☆</b>	0	1			5	0.340

#### Reversing contactors, with soldering pins, for AC operation, 3.5 VA, I<sub>n</sub> < 8 A

<b>VB6-30-10-P</b>	<b>GJL 121 1909 R ☆ 10 ☆</b>	1	0	2.2	<b>4</b>	5	0.340
<b>VB6-30-01-P</b>	<b>GJL 121 1909 R ☆ 01 ☆</b>	0	1			5	0.340

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

<b>VBC6-30-10</b>	<b>GJL 121 3901 R ☆ 10 ☆</b>	1	0	2.2	<b>4</b>	5	0.340
<b>VBC6-30-01</b>	<b>GJL 121 3901 R ☆ 01 ☆</b>	0	1			5	0.340

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

<b>VBC6-30-10-F</b>	<b>GJL 121 3903 R ☆ 10 ☆</b>	1	0	2.2	<b>4</b>	5	0.340
<b>VBC6-30-01-F</b>	<b>GJL 121 3903 R ☆ 01 ☆</b>	0	1			5	0.340

#### Reversing contactors, with soldering pins, for DC operation, 3.5 W, I<sub>n</sub> < 8 A

<b>VBC6-30-10-P</b>	<b>GJL 121 3909 R ☆ 10 ☆</b>	1	0	2.2	<b>4</b>	5	0.340
<b>VBC6-30-01-P</b>	<b>GJL 121 3909 R ☆ 01 ☆</b>	0	1			5	0.340

### Compact reversing contactors VB7, VBC7, with mechanical interlock

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

<b>VB7-30-10</b>	<b>GJL 131 1901 R ☆ 10 ☆</b>	1	0	3.0	<b>5.5</b>	5	0.340
<b>VB7-30-01</b>	<b>GJL 131 1901 R ☆ 01 ☆</b>	0	1			5	0.340

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

<b>VB7-30-10-F</b>	<b>GJL 131 1903 R ☆ 10 ☆</b>	1	0	3.0	<b>5.5</b>	5	0.340
<b>VB7-30-01-F</b>	<b>GJL 131 1903 R ☆ 01 ☆</b>	0	1			5	0.340

#### Reversing contactors, with soldering pins, for AC operation, 3.5 VA, I<sub>n</sub> < 8 A

<b>VB7-30-10-P</b>	<b>GJL 131 1909 R ☆ 10 ☆</b>	1	0	3.0	<b>5.5</b>	5	0.340
<b>VB7-30-01-P</b>	<b>GJL 131 1909 R ☆ 01 ☆</b>	0	1			5	0.340

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

<b>VBC7-30-10</b>	<b>GJL 131 3901 R ☆ 10 ☆</b>	1	0	3.0	<b>5.5</b>	5	0.340
<b>VBC7-30-01</b>	<b>GJL 131 3901 R ☆ 01 ☆</b>	0	1			5	0.340

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

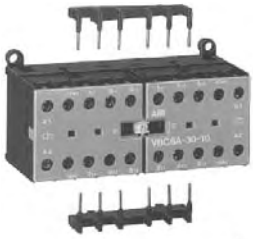
<b>VBC7-30-10-F</b>	<b>GJL 131 3903 R ☆ 10 ☆</b>	1	0	3.0	<b>5.5</b>	5	0.340
<b>VBC7-30-01-F</b>	<b>GJL 131 3903 R ☆ 01 ☆</b>	0	1			5	0.340

#### Reversing contactors, with soldering pins, for DC operation, 3.5 W, I<sub>n</sub> < 8 A

<b>VBC7-30-10-P</b>	<b>GJL 131 3909 R ☆ 10 ☆</b>	1	0	3.0	<b>5.5</b>	5	0.340
<b>VBC7-30-01-P</b>	<b>GJL 131 3909 R ☆ 01 ☆</b>	0	1			5	0.340

# Compact reversing contactors

## Ordering details



SST 276 92R

Reversing contactor VBC6A-3-10  
Reversing connection BMS6-30

Type	Order code See Page 3 for adding code suffixes ☆..☆ to the order code	Auxiliary switches		Motor output AC2...3		Price per unit	Pack- ing unit piece	Weight per piece kg
		NO	NC	220 V 240 V kW	380 V 440 V kW			

### Compact reversing contactors VB6A, VBC6A, with mechanical interlock

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

VB6A-30-10	GJL 121 1911 R ☆ 10 ☆	1	0	2.2	4		5	0.340
VB6A-30-01	GJL 121 1911 R ☆ 01 ☆	0	1				5	0.340

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

VB6A-30-10-F	GJL 121 1913 R ☆ 10 ☆	1	0	2.2	4		5	0.340
VB6A-30-01-F	GJL 121 1913 R ☆ 01 ☆	0	1				5	0.340

#### Reversing contactors, with soldering pins, for AC operation, 3.5 VA, I<sub>n</sub> < 8 A

VB6A-30-10-P	GJL 121 1919 R ☆ 10 ☆	1	0	2.2	4		5	0.340
VB6A-30-01-P	GJL 121 1919 R ☆ 01 ☆	0	1				5	0.340

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

VBC6A-30-10	GJL 121 3911 R ☆ 10 ☆	1	0	2.2	4		5	0.340
VBC6A-30-01	GJL 121 3911 R ☆ 01 ☆	0	1				5	0.340

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

VBC6A-30-10-F	GJL 121 3913 R ☆ 10 ☆	1	0	2.2	4		5	0.340
VBC6A-30-01-F	GJL 121 3913 R ☆ 01 ☆	0	1				5	0.340

#### Reversing contactors, with soldering pins, for DC operation, 3.5 W, I<sub>n</sub> < 8 A

VBC6A-30-10-P	GJL 121 3919 R ☆ 10 ☆	1	0	2.2	4		5	0.340
VBC6A-30-01-P	GJL 121 3919 R ☆ 01 ☆	0	1				5	0.340

### Compact reversing contactors VB7A, VBC7A, with mechanical interlock

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

VB7A-30-10	GJL 131 1911 R ☆ 10 ☆	1	0	3.0	5.5		5	0.340
VB7A-30-01	GJL 131 1911 R ☆ 01 ☆	0	1				5	0.340

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

VB7A-30-10-F	GJL 131 1913 R ☆ 10 ☆	1	0	3.0	5.5		5	0.340
VB7A-30-01-F	GJL 131 1913 R ☆ 01 ☆	0	1				5	0.340

#### Reversing contactors, with soldering pins, for AC operation, 3.5 VA, I<sub>n</sub> < 8 A

VB7A-30-10-P	GJL 131 1919 R ☆ 10 ☆	1	0	3.0	5.5		5	0.340
VB7A-30-01-P	GJL 131 1919 R ☆ 01 ☆	0	1				5	0.340

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

VBC7A-30-10	GJL 131 3911 R ☆ 10 ☆	1	0	3.0	5.5		5	0.340
VBC7A-30-01	GJL 131 3911 R ☆ 01 ☆	0	1				5	0.340

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

VBC7A-30-10-F	GJL 131 3913 R ☆ 10 ☆	1	0	3.0	5.5		5	0.340
VBC7A-30-01-F	GJL 131 3913 R ☆ 01 ☆	0	1				5	0.340

#### Reversing contactors, with soldering pins, for DC operation, 3.5 W, I<sub>n</sub> < 8 A

VBC7A-30-10-P	GJL 131 3919 R ☆ 10 ☆	1	0	3.0	5.5		5	0.340
VBC7A-30-01-P	GJL 131 3919 R ☆ 01 ☆	0	1				5	0.340



# Interface contactors

## Mini contactors for connection to PLCs

### Ordering details

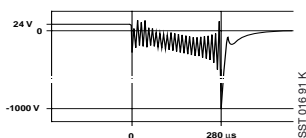


BC7-30-10-1.4

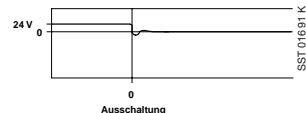
ABB 88 08441/R

#### Oscillograms

Without protective circuit



With integrated protective circuit



Ausschaltung

- 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 T7DU available as accessory, see Page 19.

#### Interface contactors BC6

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

Type	Order code	Auxiliary switches		Motor output AC2...3		Price per piece	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>								
BC6-30-10-1.4	GJL 121 3001 R 8101	1	0	2.2	4		10	0.180
BC6-30-01-1.4	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>								
BC6-30-10-F-1.4	GJL 121 3003 R 8101	1	0	2.2	4		10	0.180
BC6-30-01-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>n</sub> &lt; 8 A</b>								
BC6-30-10-P-1.4	GJL 121 3009 R 8101	1	0	2.2	4		10	0.170
BC6-30-01-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>								
BC6-30-10-2.4	GJL 121 3001 R 5101	1	0	2.2	4		10	0.180
BC6-30-01-2.4	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>								
BC6-30-10-F-2.4	GJL 121 3003 R 5101	1	0	2.2	4		10	0.170
BC6-30-01-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>n</sub> &lt; 8 A</b>								
BC6-30-10-P-2.4	GJL 121 3009 R 5101	1	0	2.2	4		10	0.170
BC6-30-01-P-2.4	GJL 121 3009 R 5011	0	1	2.2	4		10	0.170

#### Interface contactors BC7

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

<b>Motor contactors, with screw connection, for DC operation 24V / 1.4 W</b>								
BC7-30-10-1.4	GJL 131 3001 R 8101	1	0	3.0	5.5		10	0.170
BC7-30-01-1.4	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>								
BC7-30-10-F-1.4	GJL 131 3003 R 8101	1	0	3.0	5.5		10	0.170
BC7-30-01-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>n</sub> &lt; 8 A</b>								
BC7-30-10-P-1.4	GJL 131 3009 R 8101	1	0	3.0	5.5		10	0.170
BC7-30-01-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>								
BC7-30-10-2.4	GJL 131 3001 R 5101	1	0	3.0	5.5		10	0.170
BC7-30-01-2.4	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>								
BC7-30-10-F-2.4	GJL 131 3003 R 5101	1	0	3.0	5.5		10	0.170
BC7-30-01-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>n</sub> &lt; 8 A</b>								
BC7-30-10-P-2.4	GJL 131 3009 R 5101	1	0	3.0	5.5		10	0.170
BC7-30-01-P-2.4	GJL 131 3009 R 5011	0	1	3.0	5.5		10	0.170

#### Mini contactors for connection to PLCs B6S

... 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>								
B6S-30-10-1.7	GJL 121 3001 R7101	1	0	2.2	4.0		10	0.180
B6S-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>								
B6S-30-10-2.8	GJL 121 3001 R7102	1	0	2.2	4.0		10	0.180
B6S-30-01-2.8	GJL 121 3001 R7012	0	1	2.2	4.0		10	0.180

#### Mini contactors for connection to PLCs B7S ... 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>								
B7S-30-10-1.7	GJL 131 3001 R7101	1	0	3.0	5.5		10	0.180
B7S-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>								
B7S-30-10-2.8	GJL 131 3001 R7102	1	0	3.0	5.5		10	0.180
B7S-30-01-2.8	GJL 131 3001 R7012	0	1	3.0	5.5		10	0.180

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

## Ordering details



KC6-40 E-P

SST 166 91 R

Type	Order code See Page 3 for adding code suffixes ☆..☆ to the order code	Auxiliary switches		220 V 240 V A	AC15 380 V 440 V A	500 V A	Price per piece	Pack- ing unit piece	Weight per piece kg
		NO	NC						

### Mini contactor relays

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

K6-40E	GJH 121 1001 R ☆ 40 ☆	4	0	4	3	2	10	0.180
K6-31Z	GJH 121 1001 R ☆ 31 ☆	3	1	4	3	2	10	0.180
K6-22Z	GJH 121 1001 R ☆ 22 ☆	2	2	4	3	2	10	0.180

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

K6-40E-F	GJH 121 1003 R ☆ 40 ☆	4	0	4	3	2	10	0.170
K6-31Z-F	GJH 121 1003 R ☆ 31 ☆	3	1	4	3	2	10	0.170
K6-22Z-F	GJH 121 1003 R ☆ 22 ☆	2	2	4	3	2	10	0.170

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

K6-40E-P	GJH 121 1009 R ☆ 40 ☆	4	0	4	3	2	10	0.170
K6-31Z-P	GJH 121 1009 R ☆ 31 ☆	3	1	4	3	2	10	0.170
K6-22Z-P	GJH 121 1009 R ☆ 22 ☆	2	2	4	3	2	10	0.170

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

KC6-40E	GJH 121 3001 R ☆ 40 ☆	4	0	4	3	2	10	0.180
KC6-31Z	GJH 121 3001 R ☆ 31 ☆	3	1	4	3	2	10	0.180
KC6-22Z	GJH 121 3001 R ☆ 22 ☆	2	2	4	3	2	10	0.180

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

KC6-40E-F	GJH 121 3003 R ☆ 40 ☆	4	0	4	3	2	10	0.170
KC6-31Z-F	GJH 121 3003 R ☆ 31 ☆	3	1	4	3	2	10	0.170
KC6-22Z-F	GJH 121 3003 R ☆ 22 ☆	2	2	4	3	2	10	0.170

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

KC6-40E-P	GJH 121 3009 R ☆ 40 ☆	4	0	4	3	2	10	0.170
KC6-31Z-P	GJH 121 3009 R ☆ 31 ☆	3	1	4	3	2	10	0.170
KC6-22Z-P	GJH 121 3009 R ☆ 22 ☆	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

KC6-40E-1.4	GJH 121 3001 R 8401	4	0	4	3	2	10	0.180
KC6-31Z-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

KC6-40E-F-1.4	GJH 121 3003 R 8401	4	0	4	3	2	10	0.180
KC6-31Z-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

KC6-40E-P-1.4	GJH 121 3009 R 8401	4	0	4	3	2	10	0.170
KC6-31Z-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

KC6-40E-2.4	GJH 121 3001 R 5401	4	0	4	3	2	10	0.180
KC6-31Z-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

KC6-40E-F-2.4	GJH 121 3003 R 5401	4	0	4	3	2	10	0.170
KC6-31Z-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

KC6-40E-P-2.4	GJH 121 3009 R 5401	4	0	4	3	2	10	0.170
KC6-31Z-P-2.4	GJH 121 3009 R 5311	3	1	4	3	2	10	0.170

### Mini contactor relays for connection to PLCs K6S ... 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

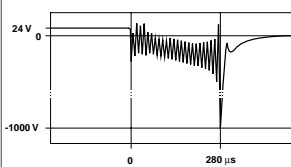
K6S-40E-1.7	GJH 121 3001 R 7401	4	0	4	3	2	10	0.180
K6S-31Z-1.7	GJH 121 3001 R 7311	3	1	4	3	2	10	0.180
K6S-22Z-1.7	GJH 121 3001 R 7221	2	2	4	3	2	10	0.180

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

K6S-40E-2.8	GJH 121 3001 R 7402	4	0	4	3	2	10	0.180
K6S-31Z-2.8	GJH 121 3001 R 7312	3	1	4	3	2	10	0.180
K6S-22Z-2.8	GJH 121 3001 R 7222	2	2	4	3	2	10	0.180

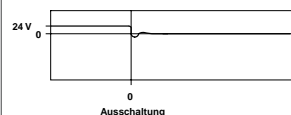
#### Oscillograms

Without protective circuit



SST 016 91 K

With integrated protective circuit



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 contactors TBC7

## Mini contactor relays TKC6

Railway app.: extended coil operating range, technical data

### Mini contactors TBC7

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

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

TBC7-30-10	GJL 131 3061 R □ 10 □	1	0	20	3	5,5	4		10	0.180
TBC7-30-01	GJL 131 3061 R □ 01 □	0	1	20	3	5,5	4		10	0.180

### Mini contactor relays TKC6

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

TKC6-22Z	GJH 121 3061 R ☆ 22 ☆	2	2	6					10	0.180
TKC6-31Z	GJH 121 3061 R ☆ 31 ☆	2	2	6					10	0.180
TKC6-40E	GJH 121 3061 R ☆ 40 ☆	4	0	6					10	0.180

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

TKC6-22Z-F	GJH 121 3063 R ☆ 22 ☆	2	2	6					10	0.180
TKC6-31Z-F	GJH 121 3063 R ☆ 31 ☆	2	2	6					10	0.180
TKC6-40E-F	GJH 121 3063 R ☆ 40 ☆	4	0	6					10	0.180

### Coil code numbers

#### Coil voltage ranges

Example:

TBC7-30-10	GJL 131 3061 R ☆ 10 ☆	1	0	20	3	5,5	4		10	0.180
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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:  $\oplus U_{cmin}$



The voltages specified in the table are absolute limit values!

It is not permitted to attach auxiliary switch blocks CA6 or CAF6.

### Technical data of TBC7, TKC6

#### Permissible ambient temperatures

including self-heating °C -30 ... +55

not including self-heating °C -30 ... +70

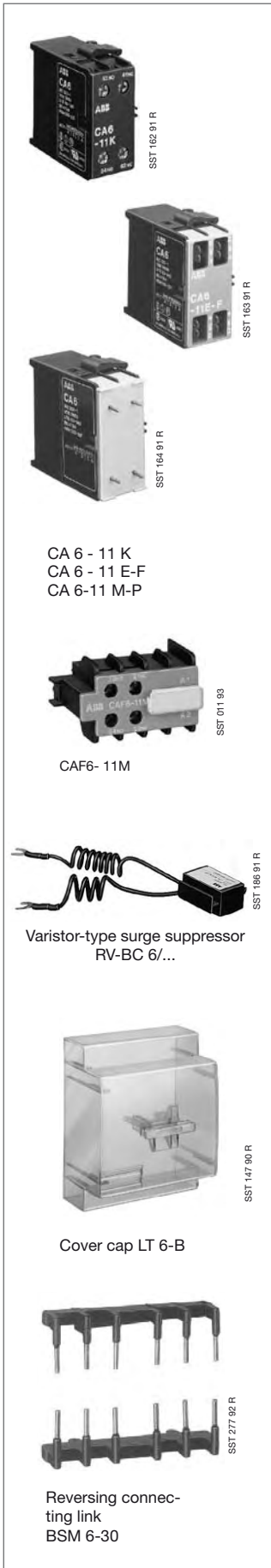
Storage temperature °C -40 ... +85

All other technical data and dimensions correspond to Types BC7 and KC6.



# Accessories for mini contactors

## Ordering details



CA 6 - 11 K  
CA 6 - 11 E-F  
CA 6-11 M-P

CAF6- 11M

Varistor-type surge suppressor  
RV-BC 6/...

Cover cap LT 6-B

Reversing connecting link  
BSM 6-30

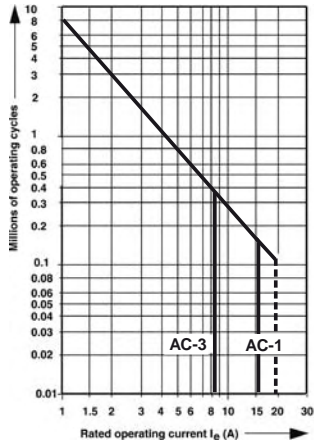
Type	Order code	For mini contactor	Price per unit	Packing unit	Weight per piece
		Type		Stck.	kg
<b>Auxiliary switch blocks for mounting at one side ②</b>					
CA6-11K	GJL 120 1317 R 0001	<b>Screw connection</b> K6... and KC6... B6(7)-40-00 and BC6(7)-40-00 B6(7)-30-10 and BC6(7)-30-10 B6(7)-30-01 and BC6(7)-30-01 <b>Flat pin connection</b> K6...F and KC6...F B6(7)-40-00-F and BC6(7)-40-00-F B6(7)-30-10-F and BC6(7)-30-10-F B6(7)-30-01-F and BC6(7)-30-01-F <b>Soldering connection</b> K6...P and KC6...P B6(7)-40-00-P and BC6(7)-40-00-P B6(7)-30-10-P and BC6(7)-30-10-P B6(7)-30-01-P and BC6(7)-30-01-P		10	0.030
CA6-11E	GJL 120 1317 R 0002			10	0.030
CA6-11M	GJL 120 1317 R 0003			10	0.030
CA6-11N	GJL 120 1317 R 0004			10	0.030
CA6-11K-F	GJL 120 1318 R 0001			10	0.030
CA6-11E-F	GJL 120 1318 R 0002			10	0.030
CA6-11M-F	GJL 120 1318 R 0003			10	0.030
CA6-11N-F	GJL 120 1318 R 0004			10	0.030
CA6-11K-P	GJL 120 1319 R 0001			10	0.030
CA6-11E-P	GJL 120 1319 R 0002			10	0.030
CA6-11M-P	GJL 120 1319 R 0003			10	0.030
CA6-11N-P	GJL 120 1319 R 0004			10	0.030
<b>Auxiliary switch blocks for mounting at front ① Screw connection</b>					
CAF6-11K	GJL 120 1330 R 0001	K6 and KC6		10	0.035
CAF6-20K	GJL 120 1330 R 0005			10	0.035
CAF6-02K	GJL 120 1330 R 0009			10	0.035
CAF6-11E	GJL 120 1330 R 0002	B(C)6-, B(C)7-40-00, VB(C)...(A) B(C)6-, B(C)7-40-00, VB(C)...(A) B(C)6-, B(C)7-40-00, VB(C)...(A)		10	0.035
CAF6-20E	GJL 120 1330 R 0006			10	0.035
CAF6-02E	GJL 120 1330 R 0010			10	0.035
CAF6-11M	GJL 120 1330 R 0003	B(C)6-, B(C)7-30-10, VB(C)...(A) B(C)6-, B(C)7-30-10, VB(C)...(A) B(C)6-, B(C)7-30-10, VB(C)...(A)		10	0.035
CAF6-20M	GJL 120 1330 R 0007			10	0.035
CAF6-02M	GJL 120 1330 R 0011			10	0.035
CAF6-11N	GJL 120 1330 R 0004	B(C)6-, B(C)7-30-01, VB(C)...(A) B(C)6-, B(C)7-30-01, VB(C)...(A) B(C)6-, B(C)7-30-01, VB(C)...(A)		10	0.035
CAF6-20N	GJL 120 1330 R 0008			10	0.035
CAF6-02N	GJL 120 1330 R 0012			10	0.035
<b>Soldering receptacle (<math>I_n \leq 8</math> A)</b>					
LB6	GJL 120 1902 R 0001	For mini contactors B, BC, K, KC For 2-pole auxiliary switch blocks		10	0.014
LB6-CA	GJL 120 1903 R 0001			10	0.006
<b>Plunger</b>					
BN6	GJL 120 1904 R 0001	For manual operation		50	0.060
<b>Identification marker</b>					
BA50	FPTN 472 625 R 0001	50 clip-on label carriers 50 transparent covers 60 non-adhesive labels ③ 75 self-adhesive labels ③ (③ on sheet)		1 bag	0.100
<b>Varistor-type surge suppressors for protective circuit of the DC contactors BC6, BC7 and KC6</b>					
Note: Mini contactors for AC operation have an integrated protective circuit.					
RV-BC6/60	GHV 250 1902 R 0002	24-60 V. with cable lug 24-60 V. flat pin, 2.8 mm		10	0.004
RV-BC6-F/60	GHV 250 1902 R 0003			10	0.004
RV-BC6/250	GHV 250 1903 R 0002	50-250 V. with cable lug 50-250 V. flat pin, 2.8 mm		10	0.004
RV-BC6-F/250	GHV 250 1903 R 0003			10	0.004
RV-BC6/380	GHV 250 1904 R 0002	380 V. with cable lug 380 V. flat pin, 2.8 mm		10	0.004
RV-BC6-F/380	GHV 250 1904 R 0003			10	0.004
<b>Cover cap, transparent, sealable, enclosure IP 20</b>					
LT6-B	GJL 120 1906 R 0001	for contactors B, BC, K, KC 6 with screw connection		10	0.001
<b>Reversing connecting link</b>					
BSM6-30	GJL 120 1908 R 0001	for compact reversing contactors, VB..., VBC... with screw connection, cross-section 1.8 mm²		10	0.010
<b>Parallel connecting link</b>					
LP6	GJL 120 1907 R 0001	for contactors B, BC, mit Schraubanschluß, 1 mm thick		100	0.001

① Auxiliary switches CA6 and CAF6 may not be fitted simultaneously.

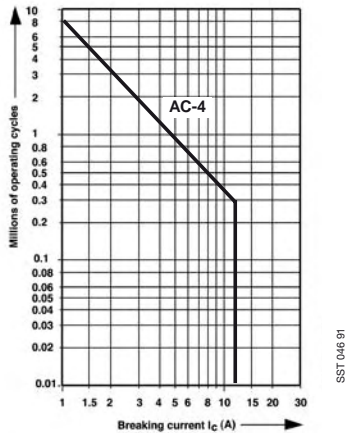
# Compact reversing contactors VB6 / VBC6 Mini contactors B6 / BC6 / B6S Mini contactor relays K6 / KC6 / K6S

Technical data to IEC 947-4-1, IEC 947-5-1

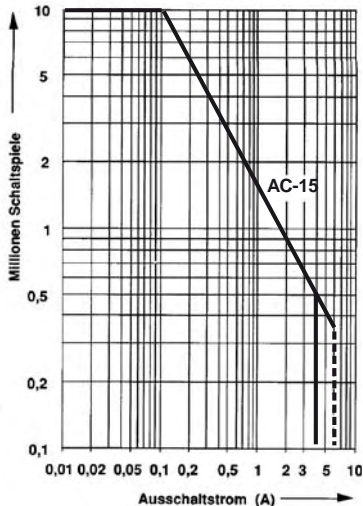
**Utilisation category AC-1/AC-3**  
Contact member service life curves  
B6, BC6, B6S



**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  
K6, KC6, CA6, CAF6



## 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	20	9    2.2
	<b>380/440 V</b>	<b>16</b>	<b>20</b>	<b>9/8    4.0</b>
	500 V	12	12	5.5    3.0

<b>Switching times</b>		<b>B6</b>	<b>BC6</b>	<b>K6</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		18 to 42	6 to 12	18 to 42	6 to 12
Opening delay	NC	14 to 26		14 to 26	

<b>Shock resistance with normal installation position</b>	Semi-sinusoïdal shock, 10 ms: with no change in contact state				
<b>Shock resistance</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

<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, CA6, CAF6, K6, KC6, K6S

<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_n</math></b>	A	6
<b>Back-up fuse, Type gGA10</b>		
<b>Rated operating current <math>I_e</math>/AC-15</b>		
at $U_e$	24-240 V	A
	380/440 V	A
	500 V	A
		4
		3
		2
<b>Rated operating current <math>I_e</math>/DC -13</b>		
at $U_e$	24 V	A
	60 V	A
	110 V	A
	220/240 V	A
		1.5
		0.5
		0.4
		0.04

<b>Min. making/breaking capacity of the auxiliary contacts</b>	⊕ 17 V and ⊕ 5 mA
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## Solenoid coils

<b>Rated power</b>		closing / holding				
Basic contactors						
B6/K6, VB6	AC	VA	3.5			
BC6/KC6, VBC6	DC	W	3.5			
Interface contactors						
BC6/KC6-1.4	DC 24 V	W	1.4			
BC6/KC6-2.4	DC 17 ... 32 V	W	2.4			
Mini contactor for connection to PLCs, mini contactor relay for connection to PLCs			cold		warm	
			I mA	P W	I mA	P W
B6S-1.7, K6S-1.7	DC 24 V	W	77	1.75	60	1.35
B6S-2.8, K6S-2.8	DC 17 ... 32 V	W	125	2.80	94	2.10
<b>Coil voltage range</b>		0.85 ... 1.1x $U_e$				

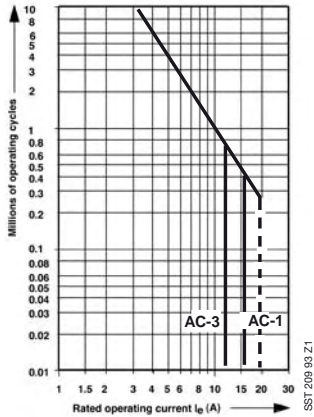
Switching DC, see overleaf

# Mini contactors B7 / BC7 / B7S

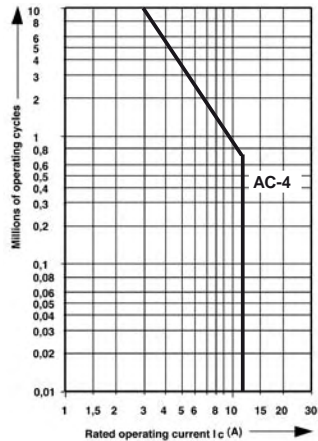
## Compact reversing contactors VB7 / VBC7

### Technical data to IEC 947-4-1

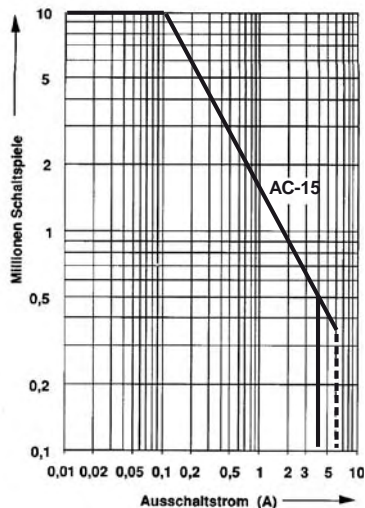
**Utilisation category AC-1/AC-3**  
Contact member service life curves  
B7, BC7, B7S



**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  
K6, KC6, CA6, CAF6



#### General data

<b>Rated insulation voltage <math>U_i</math></b>	V	690
<b>Permissible ambient temperature</b>	°C	-25 ... +55
Contactor without overload relay	°C	-25 ... +50
Contactor with overload relay	°C	-40 ... +80
<b>Storage temperature</b>	°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

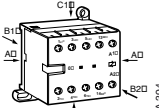
#### Main contacts

<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		
<b>DC-1, DC-3, DC-5, AC-2, AC-3, AC-15, DC-13</b>	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>		
	55 °C 40 °C	$I_e$ A	P kW	
at $U_e$	220/240 V 380/440 V 500 V	16 16 12	20 20 12	12/11 12/11 7
				3 5.5 4

#### Switching times

<b>Closing delay</b>	NO	ms	<b>B7</b>	<b>BC7</b>
			14 to 26	
<b>Opening delay</b>		ms	16 to 40	4 to 10
<b>Closing delay</b>	NC	ms	18 to 42	6 to 12
<b>Opening delay</b>		ms	14 to 26	

#### Shock resistance with normal installation position



Shock direction  
Contactors switched off  
Contactors switched on

Semi-sinusoidal shock, 10 ms, with no change in contact state

	<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

#### Back-up fuse assignment type

Type 1	25 A
Type 2	20 A

#### Auxiliary contacts: integrated

#### Minimum making/breaking

⊕ 17 V ⊕ 5 mA

#### Solenoid coils

#### Rated power

<b>Basic contactors</b>			Closing / holding			
B7 / VB7	AC	VA	3.5			
BC7 / VBC7	DC	W	3.5			
<b>Interface contactors</b>						
BC7-1.4	DC 24 V	W	1.4			
BC7-2.4	DC 17 ... 32 V	W	2.4			
<b>Mini contactor for connection to PLCs</b>			cold		worm	
			<b>I (mA)</b>	<b>P (W)</b>	<b>I (mA)</b>	<b>P (W)</b>
B7S-1.7	DC	24 V	77	1.70	60	1.35
B7S-2.8	DC	17 ... 32 V	125	2.80	94	2.10

#### Coil voltage range 0.85...1.1 x $U_e$

#### Utilisation categories for B6 and B7

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

---

# Mini contactors B6, B7 / BC6, BC7

## Compact reversing contactors VB6(7) / VBC6(7)

### Contact member service life, utilisation categories

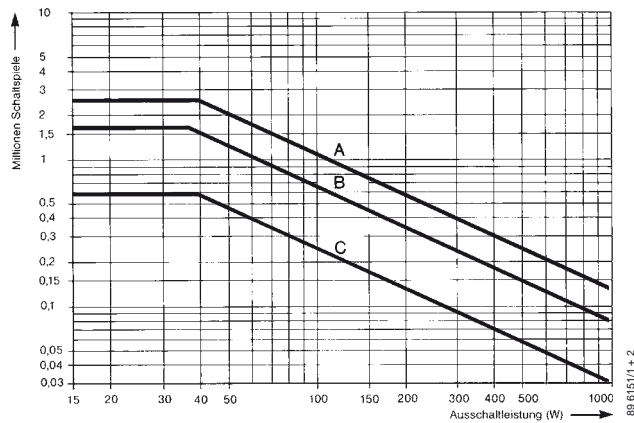
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#### Contact member service life for utilisation categories DC-1, DC-3, DC-5

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 B6, B7 / BC6, BC7

## Compact reversing contactors VB6(7) / VBC6(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) I, in the case of contactor type <b>B6, B7, BC6, BC7</b>	Capacitor load in $\mu\text{F}$
	Watt	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	

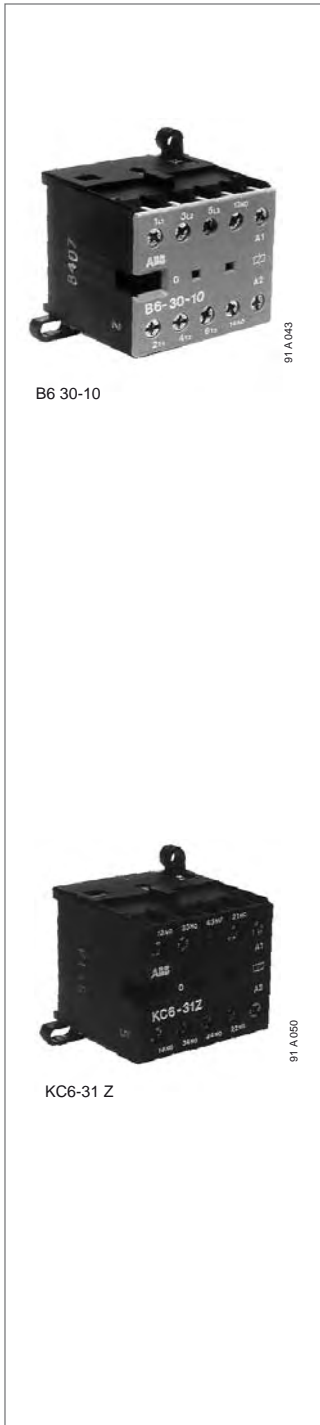
Lamp type	Lamp data		Permissible number of lamps per circuit (230 V, 50 Hz) I, in the case of contactor type <b>B6, B7, BC6, BC7</b>	Capacitor load in $\mu\text{F}$
	Watt	A		
Metal-halogen lamps e.g. HQI, HPI	<b>p.f. uncorrected</b>			
	35	0.53	10	
	70	1	5	
	150	1.8	3	
	250	3	2	
	400	3.5	1	
	<b>Parallel 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 for	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		



# Mini contactors, mini contactor relays

## Thermal overload relay

### Accessories, 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

SEV Switzerland	DEMKO Denmark	NEMKO Norway	SEMKO Sweden	EL Inspect. Finland	CS Canada	USA	UL	GL Germany

#### Mini 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	■	■	■	■	■	■	■	■	■
B6S/B7 S						■		■	

#### Compact reversing contactors

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

#### Thermal overload relay

T6DU	■	□	■	■	■	■	■	■	■
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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 for contactors B(C)6:

Rated operating voltage	U <sub>e</sub> ~ (V)	110/120 V	220/240 V	440/480 V	540/600 V
Motor output 3-phase	P (hp)	1	2	3	1
	I <sub>e</sub> (A)	8.4	6.8	1.8	1.7
Motor output Single-phase	P (hp)	1	2	-	-
	I <sub>e</sub> (A)	16	12	-	-

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

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 for contactors B(C)7 :

Rated operating voltage	U <sub>e</sub> ~ (V)	110/120 V	220/240 V	440/480 V	540/600 V
Motor output 3-phase	P (hp)	1	3	5	5
	I <sub>e</sub> (A)	8.4	9.6	7.6	6.1
Motor output Single-phase	P (hp)	1	2	2	2
	I <sub>e</sub> (A)	16	12	6	4.8

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

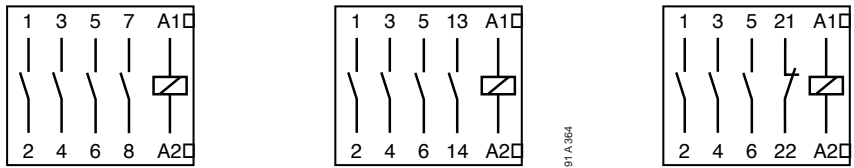
- 5 A-600 V, AC pilot duty A 600 for incorporated auxiliary contacts B(C)6, K(C)6 and B(C)7, in addition to attachable auxiliary switch blocks CA6.  
Values for 220 ... 208 V = (220 ... 240 V) x 1.15

# Mini contactors and mini contactor relays

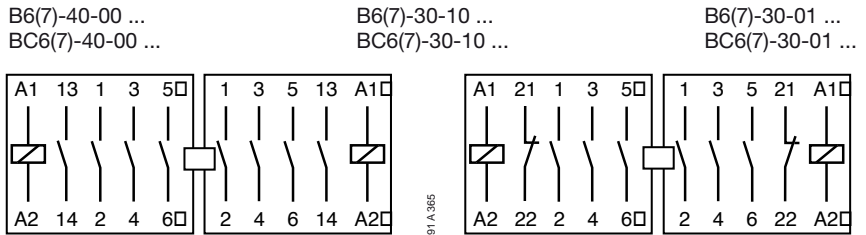
## Terminal designation

## and location of the connection terminals

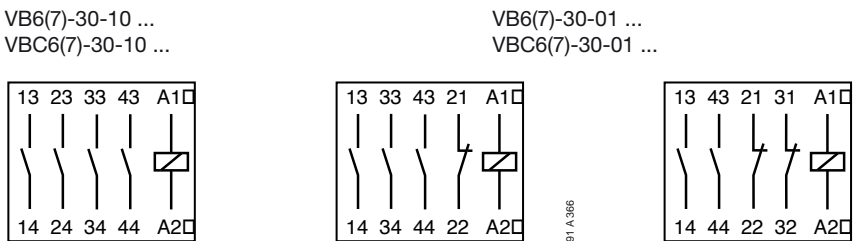
### Location of the connection terminals and terminal designation



### Mini contactors



### Compact reversing contactors



### Mini contactor relays

## Auxiliary switches CA6/CAF6

For extending the mini contactors B6, B7, BC6, BC7, K6 and KC6 with auxiliary contacts

**Except:** Contactors with coils < 3.5 W

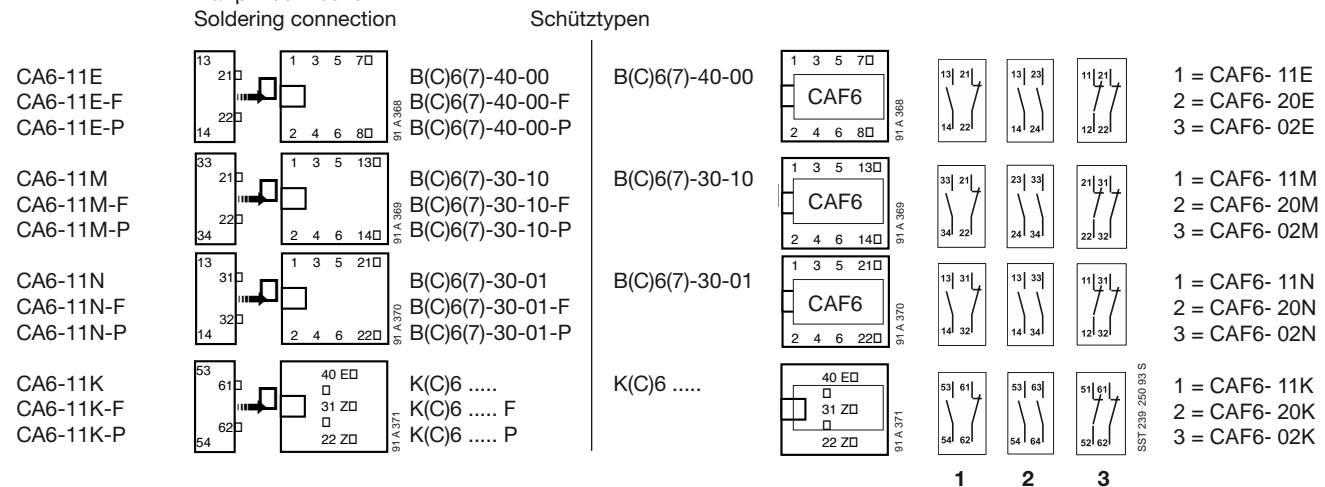
### Auxiliary switches CA6.., attachable at side

Cannot be attached on compact reversing contactors VB6(7), VBC6(7), VB6A(7) or VBC6A(7).

**Connection type:** Screw connection  
 Flat pin connection  
 Soldering connection

### Auxiliary switches CAF6, (also in the case of reversing contactors) can be screwed on at the front

**Connection type:** Screw connection



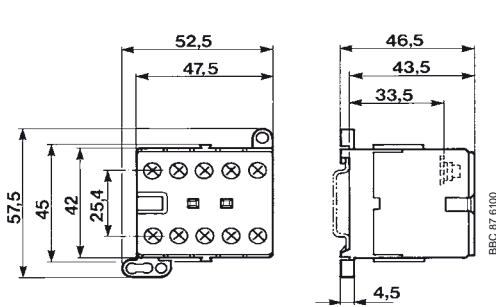
Only one CA 6 or one CAF 6 auxiliary switch can be attached to a contactor in each case

# Mini contactors

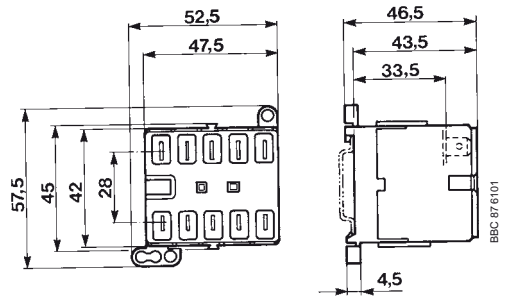
## Accessories

### Dimension diagrams

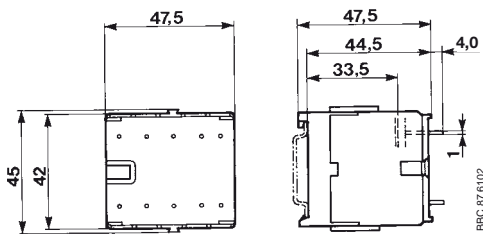
Dimensions in mm  
Subject to modification



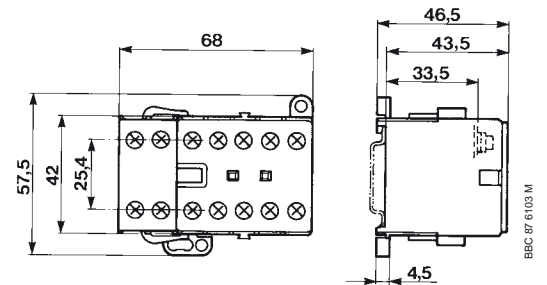
B6(7)..., BC6(7)..., K6..., KC6...,  
for screw connection



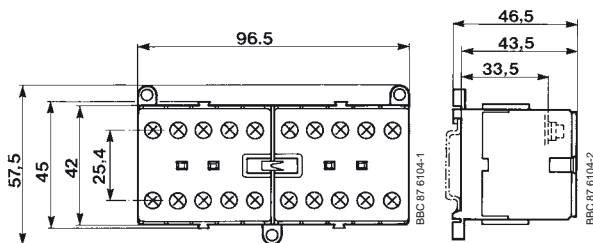
B6(7)..., BC6(7)..., K6..., KC6...,  
for flat pin connection



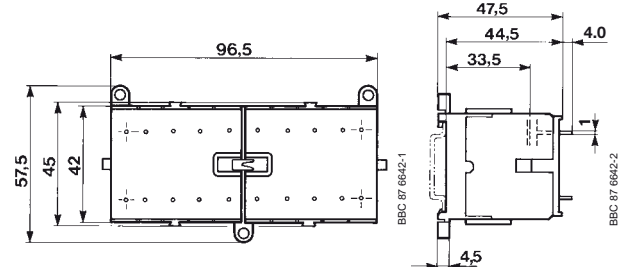
B6(7)..., BC6(7)..., KC6..., KC6...,  
with soldering pins



B6(7)..., BC6(7)..., K6..., KC6...,  
with auxiliary switch block CA6



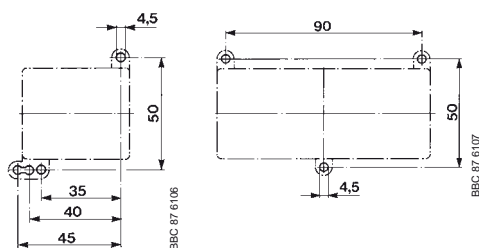
Compact reversing contactor VB(C)6(7)  
with screw connection



Compact reversing contactor VB(C)6(7)  
with soldering pins

### Drilling plans for mini contactors

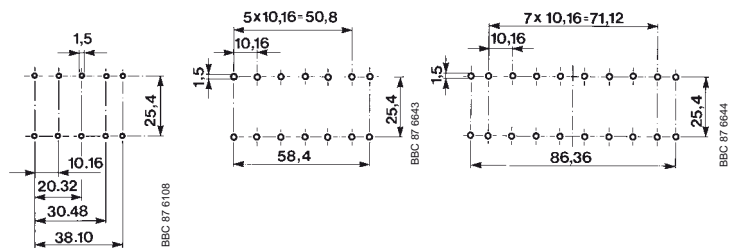
For screw mounting M4



B6(7)..., BC6(7)...,  
K6..., KC6..

VB6(7), VBC6(7)  
VB6A(7A), VBC6A(7A)

For PC board



Basic devices  
4-pole

Basic devices with  
auxiliary switch block

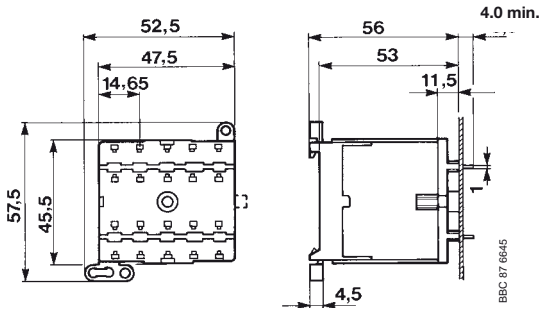
Compact  
reversing contactor

# Mini contactors

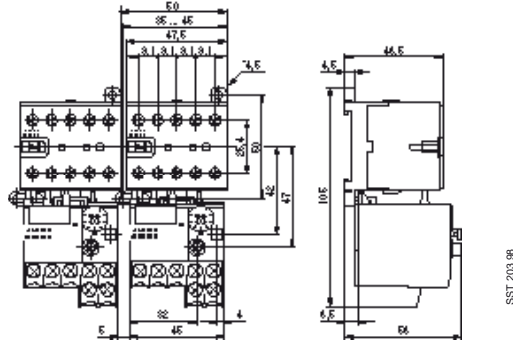
## Accessories

### Dimension diagrams

Dimensions in mm  
Subject to modification

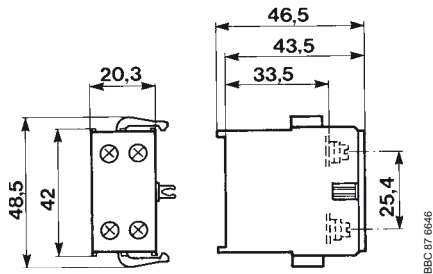


B6(7)-F mit LB6

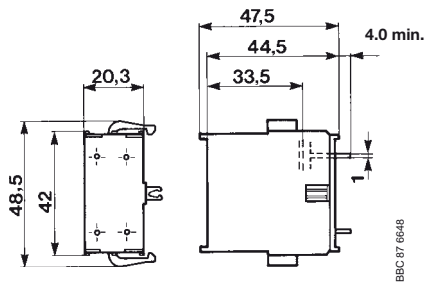


B6(7) with T7DU

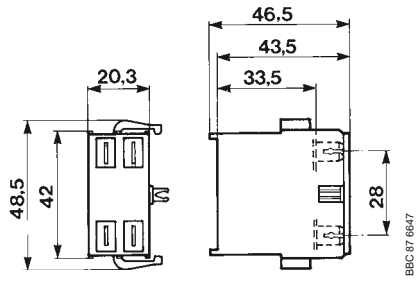
### Auxiliary switch blocks



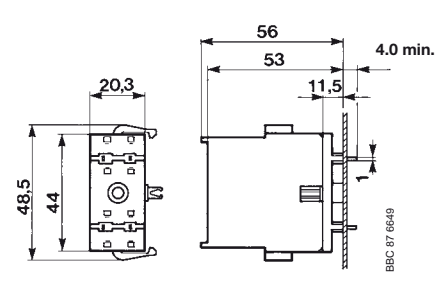
CA6



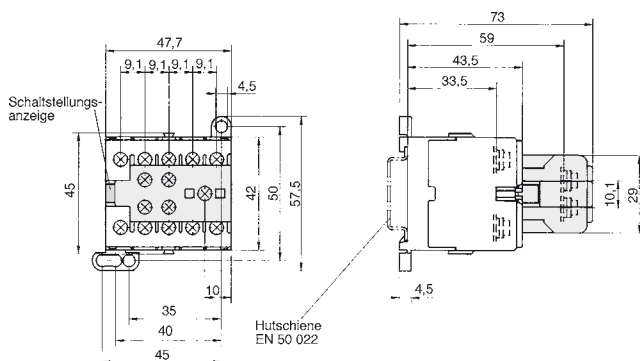
CA6-P



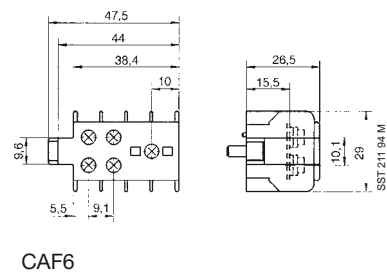
CA6-F



CA6 with LB6-CA



B(C)6, B(C)7, K(C)6  
with screwed-on auxiliary switch block CAF6



CAF6

# Thermal overload relay T7DU

for mini contactors

Technical data, ordering details



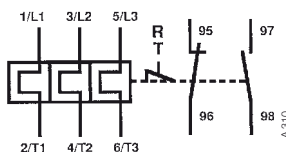
SST 002 96

Thermal overload relay T7DU



SST 001 96

Thermal overload relay T7DU mounted onto a mini contactor B7-30-01



Type	Order code	Setting range	Max. fuse		Preis per piece	Pack. unit	Weight
			aM	gL			
		A ... A	A	A		piece	kg

## Thermal overload relay T7DU for mini contactors B6, BC6, B6S, BC6, VB6, VBC6, B7, BC7, B7S, BC7, VB7, VBC7

T7DU 0.16	1SAZ 111 301 R 0001	0.10 ... 0.16		0.5		1	0.070
T7DU 0.24	1SAZ 111 301 R 0002	0.16 ... 0.24		1,0		1	0.070
T7DU 0.4	1SAZ 111 301 R 0003	0.24 ... 0.40		2,0		1	0.070
T7DU 0.6	1SAZ 111 301 R 0004	0.40 ... 0.60		2,0		1	0.070
T7DU 1.0	1SAZ 111 301 R 0005	0.60 ... 1.00		4,0		1	0.070
T7DU 1.6	1SAZ 111 301 R 0006	1.00 ... 1.60		6,0		1	0.070
T7DU 2.4	1SAZ 111 301 R 0007	1.60 ... 2.40		6,0		1	0.070
T7DU 4.0	1SAZ 111 301 R 0008	2.40 ... 4.00		10,0		1	0.070
T7DU 6.0	1SAZ 111 301 R 0009	4.00 ... 6.00		10,0		1	0.070
T7DU 9.0	1SAZ 111 301 R 0010	6.00 ... 9.00		10,0		1	0.070
T7DU12.0	1SAZ 111 301 R 0011	9.00 ... 12.00		20,0		1	0.070

T7DU is into normal Version for EEx e suitableTable:  
 Tripping times of T7DU at multiple of setting current on request.  
 Technical data see page 20.

Dimension (in mm)  
 B6/B7 with mounted T7DU see page 18.

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.



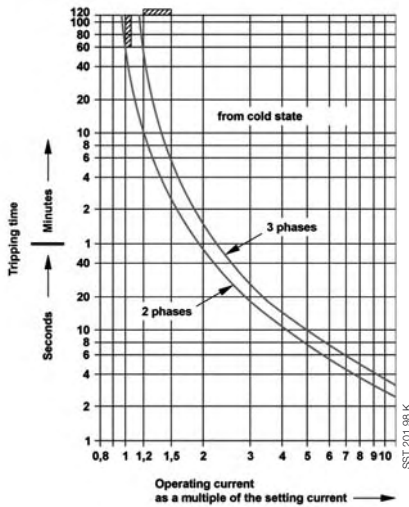
# Therma ad relay T7DU

for mini contactors

Technical data, ordering details

## Technical data

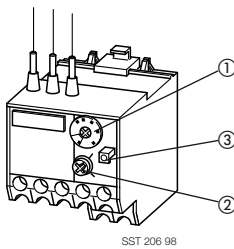
<b>Rated insulation voltage</b>	$U_i$	690 V
<b>Permissible ambient temperature</b>	°C	-25 ... +50 open temperature-compensated
<b>Storage temperature</b>	°C	-40 ... +70
<b>Mounting position</b>		±30° referred to vertical mounting position not horizontal, not upside down, 5 mm lateral clearance for side-by-side mounting
<b>Switching frequency with avoidance of premature tripping</b>	max. ops./h	15
<sup>2</sup> 40 % relative duty	max. ops./h	60 (if $6 \times I_n$ starting time <sup>2</sup> 1s)



## Load rating of auxiliary switches

Type	T 7 DU		
	NC 95-96	NO 97-98	
<b>Rated operating voltage <math>U_e</math></b>	V	500	500
Thermal continuous current	A	6	6
<b>Rated operating voltage <math>I_e</math></b>			
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

Time-current curves (mean values), for thermal overload relay T7DU, 0.1 ... 12 A.

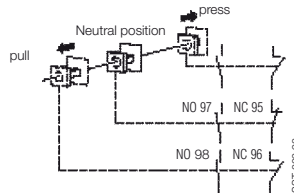


## Setting options

① **Setting knob** for motor rated current

② **Reset:** Manual "manual reset"  
**Position A:** Auto "without manual reset"  
**Position H:** Reset off

③ **Test knob**

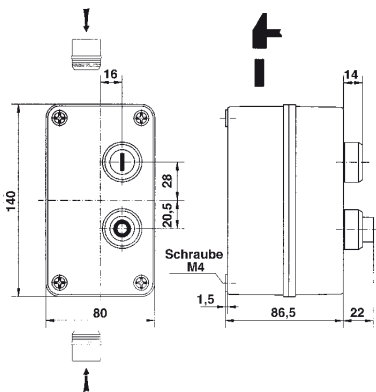


# Motor starters in insulating-material housings DRB6, DRB7



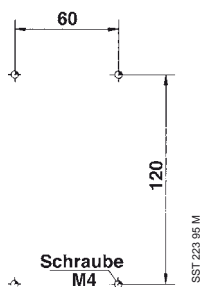
DRB6 / DRB7

SST 055 95 R



Dimension diagram DRB6 / DRB7

SST 222 95 M



Drilling plan DRB6 / DRB7

SST 223 95 M

The convincing features of the motor starters DRB6 and DRB7 are their power and efficiency with compact design. DRB 6 is capable of switching rated motor outputs of 4 kW AC3 and DRB7 switches rated outputs up to 5.5 kW AC3. The devices are extremely low-noise. The motor starters feature contactors of type of construction B6 resp. B7 with universal coils. The insulating-material housings comply with enclosure IP 65. The starters are available in two versions: with or without integrated thermal overload relay T7DU.

## Ordering details

Type	Control voltage 40 to 450 Hz.	Order code	Max. back-up fuse, Type 2		Price	Weight/ piece  kg
			aM A	gl A		

### Motor starter with thermal overload relay T 7 DU

Type	Control voltage	Order code	aM	gl	Price	Weight/ piece
DRB6 1.0 A	220 -240 V AC	GJK 127 4156 R 5689	2	4		0.670
DRB6 1.6 A	220 -240 V AC	GJK 127 4156 R 5691	2	4		0.670
DRB6 2.4 A	220 -240 V AC	GJK 127 4156 R 5693	4	6		0.670
DRB6 4.0 A	220 -240 V AC	GJK 127 4156 R 5694	4	6		0.670
DRB6 6.0 A	220 -240 V AC	GJK 127 4156 R 5696	10	16		0.670
DRB6 9.0 A	220 -240 V AC	GJK 127 4156 R 5697	12	20		0.670

### Motor starter without thermal overload relay

Type	Control voltage	Order code	aM	gl	Price	Weight/ piece
DRB6	220-240 V AC	GJK 127 4156 R 5601				0.580
DRB7	220 -240 V AC	GJK 137 4156 R 5601				0.580

## Technical data

General data:

Motor starters DRB6 and DRB7 feature thermal overload relays T7DU and pushbuttons "ON"- "OFF/RESET" and are wired in accordance with the circuit diagram below. (Pushbuttons green for ON, red for OFF/RESET)

Motor output, AC-3:

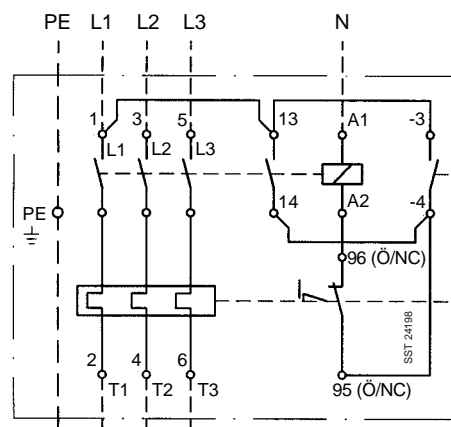
**DRB6** 380-415 V 4.0 kW    **DRB7** 380-415 V 5.5 kW

Application:

Starting 3-phase motors, 40-60 Hz AC3

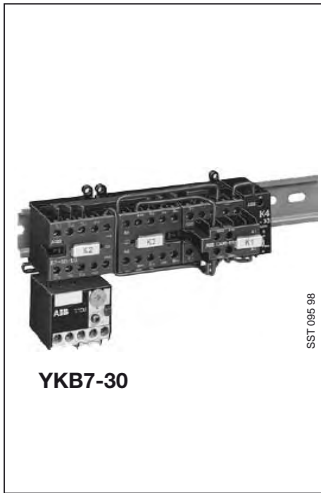
## Circuit diagram

$U_e$  380 - 415 V 3-phase, 50/60 Hz     $U_c$  220 - 240 V 40 ... 450 Hz



# Star-delta contactor combinations

## Type YKB7-30



Star-delta contactor combination YKB7-30 for switching motors up to 9 kW AC3 400/440 V.

The small, compact and extremely flat combination can be used primarily for applications in which space is at a premium or which involve a low installation depth owing to their compact dimensions of (HxWxD) 105 x 185 x 80.6 mm.

The star-delta contactor combination consists of a three mini contactors, one thermal overload relay

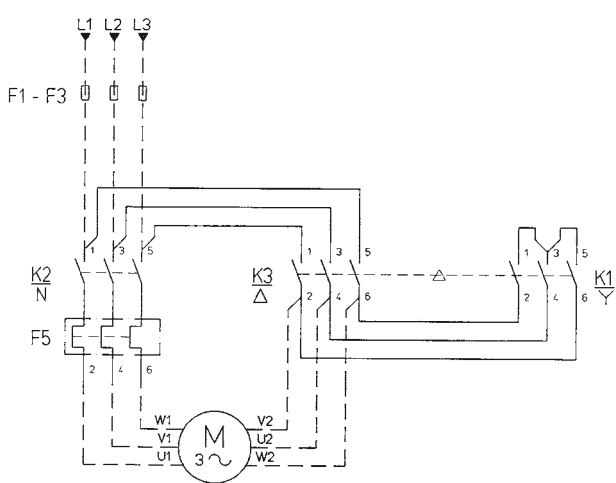
(set to rated motor current x 0.58) and a star-delta timer block with a setting range of 1.5 ... 30 s.

The YKB7-30 is pre-wired ready for connection and is mounted on a top-hat rail to DIN EN 50 022, enclosure IP 00.

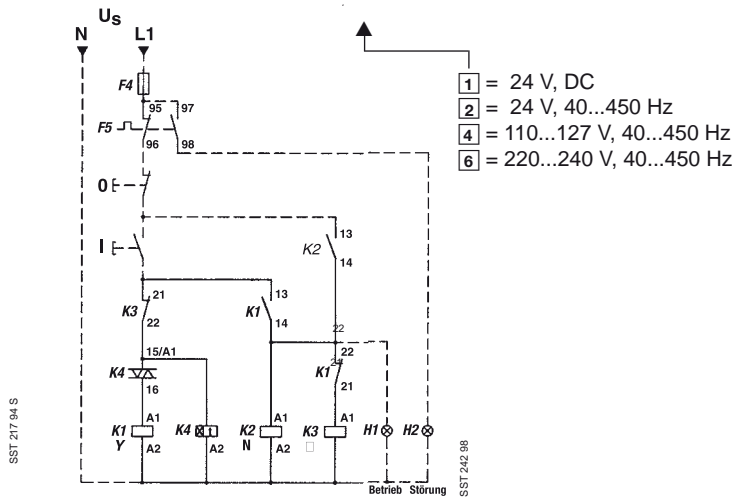
An incorporated mechanical interlock which mutually interlocks the star contactor and delta contactor ensures high operational reliability.

### Ordering details

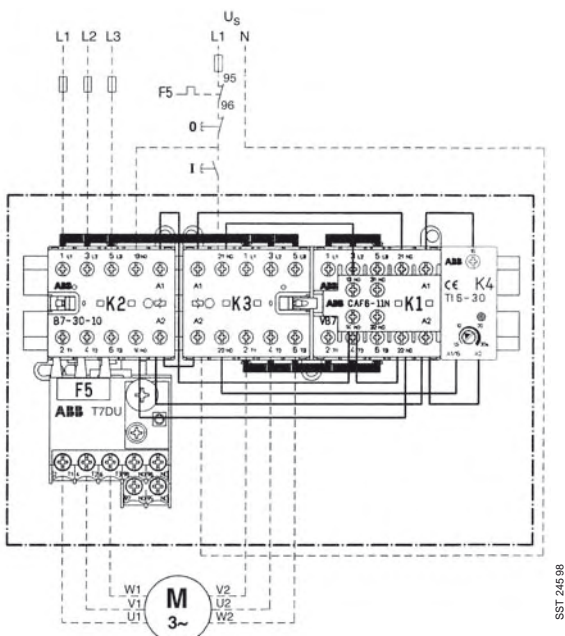
Motor output P 400 V, AC 3 kW	Contactors N, Y, Δ	Thermal overload relay Setting range A	Order code Add the code No. <input type="checkbox"/> to the order code	Price	Weight/ piece kg	Pack. unit piece
<b>4</b>	B7, VB7	4.0 ... 6.0	<b>GJK 131 389</b> <input type="checkbox"/> R 0096		0.760	1
<b>5.5 ... 7.5</b>	B7, VB7	6.0 ... 9.0	<b>GJK 131 389</b> <input type="checkbox"/> R 0097		0.760	1
<b>9</b>	B7, VB7	9.0 ... 12.0	<b>GJK 131 389</b> <input type="checkbox"/> R 0098		0.760	1



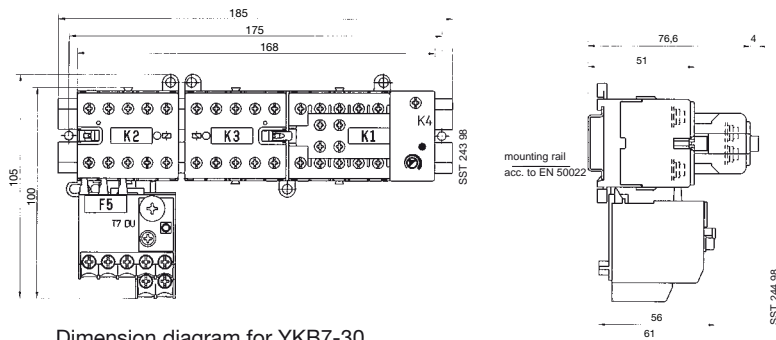
Main circuit for YKB7-30



Control circuit for YKB7-30



Wiring diagram for YKB7-30



Dimension diagram for YKB7-30

# Mini Contactors

Type B6, B7

