Film Capacitors - Power Factor Correction

Capacitor Contactors

Series/Type:	**B44066S****J110/J230**
Ordering code:	**B44066S***J***
Date:	February 2018
Version:	12

EPCOS AG is a TDK Group Company.

Characteristics

- Excellent damping of inrush current
- Improved power quality (e.g. avoidance of voltage sags)
- Longer useful life of main contacts of capacitor contactor
- Soft switching of capacitor and thus longer useful life
- Enhanced mean life expectancy
- Reduced ohmic losses
- Easy access for cable connection
- AC6b utilization category for switching 3-phase capacitors
- Approvals
  - cUL approval
  - CCC (China Compulsory Certification)

B44066S….J230/J110

B44066S9010J230

B44066S1810J230/J110

Features	
Resistors	Tamper-proof and protected
Leading contacts	With wiper function
Pre-contacts	Snap function
Aux-contacts	For all types

Type / Main contacts		B44066S1810…	B44066S2410…	B44066S3210…	B44066S5010…
Capacitor power at 50 °C					
■ 380 ... 400 V	kvar	0 ... 12.5	10 ... 20	10 ... 25	20 ... 33.3
■ 415 ... 440 V		0 ... 13	10.5 ... 22	10.5 ... 27	23 ... 36
■ 660 ... 690 V		0 ... 20	17 ... 33	17 ... 41	36 ... 55
Capacitor power at 60 °C					
■ 380 ... 400 V	kvar	0 ... 12.5	10 … 20	10 ... 25	20 ... 33.3
■ 415 ... 440 V		0 ... 13	10.5 ... 22	10.5 ... 27	23 ... 36
■ 660 ... 690 V		0 ... 20	17 ... 33	17 ... 41	36 ... 55
Coil operating voltage at 50 Hz[1]):					
■ Type ... 230	V AC	220 ... 240	220 ... 240	220 ... 240	220 ... 240
■ Type …110		110	110	110	On request
■ Type …400		N/A	N/A	380 … 415	N/A
Coil operating voltage at 60 Hz[1)]:					
■ Type ... 230	V AC	230 ... 264	230 ... 264	230 ... 264	230 ... 264
■ Type ... 110		110 ... 120	110 ... 120	110 ... 120	On request
■ Type …400		N/A	N/A	400 …440	N/A
Rated op. current AC6b at 50/60 Hz					
■ 50 °C	A	0 ... 18	14 ... 28	14 ... 36	30 ... 48
■ 60 °C		0 ... 18	14 ... 28	14 ...36	30 ... 48
Power loss contactor at max. rated capacitor current	W	4.1	5.7	7.5	12.6
Rated insulation voltage	V AC	690[1)]	690[1)]	690[1)]	690[1)]
Max. frequency of operations:	1/h	120	120	120	120
Contact life:	Million				
■ without reactors	opera-	0.25	0.15	0.15	0.15
■ with reactors	tions	0.40	0.30	0.30	0.30
Cable cross section for contactors without thermal overload relay 1 cable per clamp Main connector					
■ Solid or stranded	mm^2	0.75 – 6	1.5 – 25	1.5 – 25	4 – 50
■ Flexible	mm^2	1 – 4	2.5 – 16	2.5 – 16	10 – 35
■ Flexible with multicore cable end	mm^2	0.75 – 4	1.5 – 16	1.5 – 16	6 – 35
2 cables per clamp					
■ Solid or stranded	mm^2	6+(1-6) / 4+(0.75-4) 2.5+(0.75-2.5) / 1.5+(0.75-1.5)	16+(2.5-6) / 10+(4-10) 6+(4-6) / 4+(2.5-4)	16+(2.5-6) / 10+(4-10) 6+(4-6) / 4+(2.5-4)	50+4 / 35+6 / 25+(6-16) 16+(6-16) / 10+(6-16)
■ Flexible	mm^2	6+(1.5-6) / 4+(1-4) 2.5+(0.75-2.5) / 1.5+(0.75-1.5)	16+(2.5-6) / 10+(4-10) 6+(4-6) / 4+(2.5-4)	16+(2.5-6) / 10+(4-10) 6+(4-6) / 4+(2.5-4)	50+(4-10) / 35+(4-16) 25+(4-25) / 16+(4-16)
Cables per clamp		2	2	2	2

1) Suitable at 690 V for: earthed-neutral systems, overvoltage category I to IV, pollution degree 3 (standard-industry): V_{imp} = 8 kV. Data for other conditions on request.

2) Operating range of magnet-coils 0.85 V_s (min. value of rated control voltage) up to 1.1 • V_s (max. value of rated control voltage).

Type/Main contacts		B44066S1810…	B44066S2410…	B44066S3210…	B44066S5010…
For main connector					
■ Solid AWG		18 – 10	16 – 10	16 – 10	12 – 10
■ Flexible AWG		18 – 10	14 – 4	14 – 4	10 – 0
Cables per clamp		2	1	1	1
■ Solid AWG	mm^2	10+(16-10) / 12+(18-12) 14+(18-14) / 16+(18-16)	10+(16-10) / 12+(18-12) 14+(18-14) / 16+(18-16)	10+(16-10) / 12+(18-12) 14+(18-14) / 16+(18-16)	10+(12-10) / 12+12
■ Flexible AWG	mm^2	10+(14-10) / 12+(18-12) 14+(18-14) / 16+(18-16)	4+(18-12) / 6+(18-8) 8+(18-8) / 10+(18-12)	4+(18-12) / 6+(18-8) 8+(18-8) / 10+(18-12)	1+(12-10) / 2+(8-12) 3+(12-8) / 4+(10-6)
Cables per clamp		2	2	2	2
Weight including auxiliary contact:	kg	0.37	0.67	0.67	1.03
Fuses gL (gG) from / to	A	35 / 63	50 / 80	63 / 100	80 / 160
Auxiliary contacts					
Normal Open (NO)		1	1	1	1
Rated insulation voltage	V AC	690[2)]	690[2)]	690[2)]	690[2)]
Rated operational current AC15 at 230 V / 400 V	A	3 / 2	3 / 2	3 / 2	3 / 2
Rated operational current AC1 at 690 V	A	10	10	10	10

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2) Operating range of magnet-coils 0.85 V_s (min. value of rated control voltage) up to 1.1 • V_s (max. value of rated control voltage).

Type/Main contacts		B44066S6210…	B44066S7410…	B44066S9010…	B44066S9910…
Capacitor power at 50 °C					
■ 380 ... 400 V	kvar	20 ... 50	20 ... 75	33…80	33 ... 100
■ 415 ... 440 V		23 ... 53	23 ... 75	36…82	36 ... 103
■ 660 ... 690 V		36 ... 82	36 ... 120	57…120	57 ... 148
Capacitor power at 60 °C					
■ 380 ... 400 V	kvar	20 ... 50	20 ... 60	33…75	33 ... 90
■ 415 ... 440 V		23 ... 53	23 ... 64	36…77	36 ... 93
■ 660 ... 690 V		36 ... 82	36 ... 100	57…120	57 ... 148
Coil operating voltage at 50 Hz1):					
■ Type ... 230	V AC	220 … 240	220 … 240	220 … 240	220 … 240
■ Type …110		110	110	On request	On request
■ Type …400		380 …415	N/A	N/A	N/A
Coil operating voltage at 60 Hz1):					
■ Type ... 230	V AC	230 … 264	230 … 264	277	277
■ Type ... 110		110 … 120	110 … 120	On request	On request
■ Type …400		400 … 440	N/A	N/A	N/A
Rated op. current AC6b at 50/60 Hz					
■ 50 °C	A	30 … 72	30 … 108	50 … 115	50 … 144
■ 60 °C		30 … 72	30 … 87	50 … 108	50 … 130
Power loss contactor at max. rated capacitor current	W	21	38.7	29	36
Rated insulation voltage	V AC	690[1)]	690[1)]	1000[1)]	1000[1)]
Max. frequency of operations:	1/h	120	80	80	80
Contact life:	Million				
■ without reactors	opera-	0.15	0.12	0.12	0.12
■ with reactors	tions	0.30	0.20	0.20	0.20
Cable cross section for contactors without thermal overload relay; 1 cable per clamp					
Main connector					
■ Solid or stranded	mm^2	4 – 50	4 – 50		
■ Flexible	mm^2	10 – 35	10 – 35		
■ Flexible with multicore cable end	mm^2	6 – 35	6 – 35		
2 cables per clamp				Top Below	Top Below
■ Solid or stranded	mm^2	50+4 / 35+6 / 25+(6-16) 16+(6-16) / 10+(6-16)	50+4 / 35+6 / 25+(6-16) 16+(6-16) / 10+(6-16)	0.5 – 95 +10 120	0.5 – 95 +10 120
■ Flexible	mm^2	50+(4-10) / 35+(4-16) 25+(4-25) / 16+(4-16)	50+(4-10) / 35+(4-16) 25+(4-25) / 16+(4-16)	0.5 − 70+10 – 95	0.5 − 70+10 – 95
Cables per clamp		2	2	1+1	1+1
For main connector					
■ Solid AWG	mm^2	12 – 10	12 – 10		
■ Flexible AWG	mm^2	10 – 0	10 – 0		
Cables per clamp		1	1		
■ Solid AWG	mm^2	10+(12-10) / 12+12	10+(12-10) / 12+12	Top Below 18 – 10 --	Top Below 18 – 10 --
■ Flexible AWG	mm^2	1+(12-10) / 2+(8-12) 3+(12-8) / 4+(10-6)	1+(12-10) / 2+(8-12) 3+(12-8) / 4+(10-6)	18 – 3/0 8 – 4/0	18 – 3/0 8 – 4/0
Cables per clamp		2	2	1 + 1	1 + 1

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2) Operating range of magnet-coils 0.85 V_s (min. value of rated control voltage) up to 1.1 • V_s (max. value of rated control voltage).

Type/Main contacts		B44066S6210…	B44066S7410…	B44066S9010…	B44066S9910…
Weight including auxiliary contact: ■ Type …J…	kg	1.03	1.03	2.3	2.33
Fuses gL (gG) from / to	A	125/160	160/200	160/200	160/250
Auxiliary contacts					
Normal Open (NO)		1	1	1	1
Rated insulation voltage	V AC	690[2)]	690[2)]	690[2)]	690[2)]
Rated operational current AC15 at 230 V / 400 V	A	3 / 2	3 / 2	3 / 2	3 / 2
Rated operational current AC1 at 690 V	A	10	10	10	10

1) Suitable at 690 V for: earthed-neutral systems, overvoltage category I to IV, pollution degree 3 (standard-industry): V_{imp} = 8 kV. Data for other conditions on request.

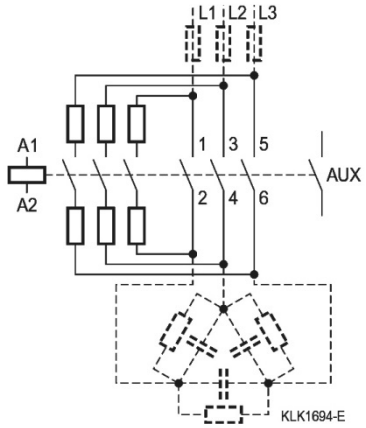
2) Operating range of magnet-coils 0.85 V_s (min. value of rated control voltage) up to 1.1 • V_s (max. value of rated control voltage).

Display of ordering codes for EPCOS products

The ordering code for one and the same EPCOS product can be represented differently in data sheets, data books, other publications, on the EPCOS website, or in order-related documents such as shipping notes, order confirmations and product labels. **The varying representations of the ordering codes are due to different processes employed and do not affect the specifications of the respective products**. Detailed information can be found on the Internet under www.epcos.com/orderingcodes

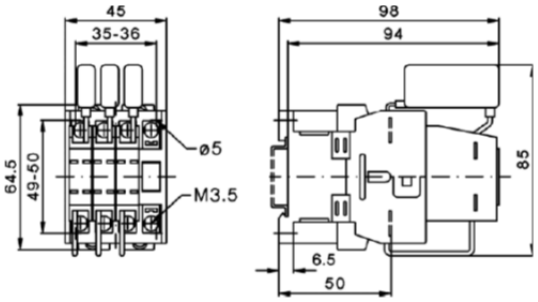
Connection diagram for all types B44066S…J…

B44066S1810J230, B44066S9010J230 and B44066S9910J230 with resistors inside housing.

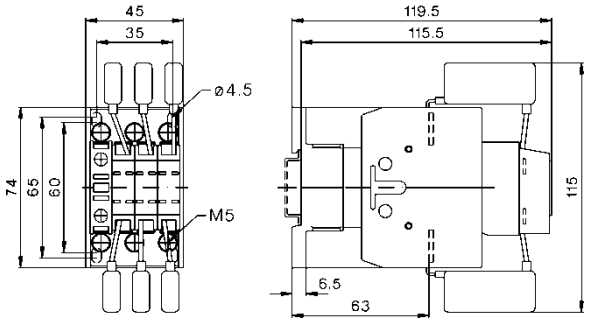


Dimensional drawings

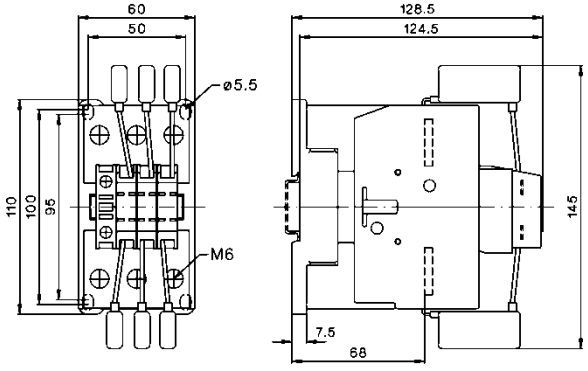
B44066S1810J230, B44066S1810J110
with wires on the bottom only



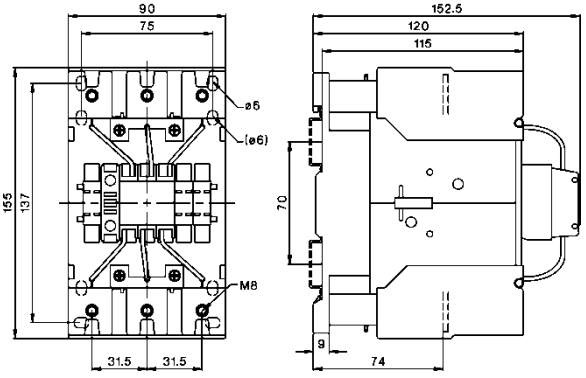
B44066S2410J230, B44066S3210J230
B44066S2410J110, B44066S3210J110



B44066S5010J230, B44066S6210J230,
B44066S6210J110, B44066S7410J230,
B44066S7410J110



B44066S9010J230, B44066S9910J230



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Cautions and warnings

In case auxiliary contacts are used for switching of discharge resistors (not in accordance with IEC 60831 standard), make sure that the current of the discharge resistors is not higher than the rated current of the auxiliary contacts.

Mounting instructions

In the area of capacitor switching contactors, difficultly inflammable and self-extinguishing materials may be used only, because abnormal temperatures within the area of the resistance spirals cannot be excluded.

Note

For detailed information about PFC key components and cautions, refer to the latest version of EPCOS PFC Product Profile.
Please refer to “Installation and Maintenance Instructions for Capacitor Contactors”, available in the Internet.
Important: Please note that the „General Safety Recommendations for Power Capacitors“ by ZVEI (German Electrical and Electronic Manufacturers´ Association (ZVEI) have to be observed in addition to the caution guidelines stated in the data sheet (Internet: www.epcos.com/pfc).

FAILURE TO FOLLOW CAUTIONS MAY RESULT, WORST CASE, IN PREMATURE FAILURES OR PHYSICAL INJURY.

Note

For detailed information about PFC capacitors and cautions, refer to the latest version of EPCOS PFC Product Profile.

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The following applies to all products named in this publication:

1. Some parts of this publication contain **statements about the suitability of our products for certain areas of application**. These statements are based on our knowledge of typical requirements that are often placed on our products in the areas of application concerned. We nevertheless expressly point out **that such statements cannot be regarded as binding statements about the suitability of our products for a particular customer application.** As a rule we are either unfamiliar with individual customer applications or less familiar with them than the customers themselves. For these reasons, it is always ultimately incumbent on the customer to check and decide whether a product with the properties described in the product specification is suitable for use in a particular customer application.
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