Capacitors for Power Factor Correction

Series/Type: B44066S*N110, B44066S*N230

The following products presented in this data sheet are being withdrawn.

Ordering Code	Substitute Product	Date of Withdrawal	Deadline Last Orders	Last Shipments
B44066S9010N110	B44066S*J110	2018-02-02	2018-05-11	2018-08-18
B44066S7410N230	B44066S*J230	2018-02-02	2018-05-11	2018-08-18
B44066S6210N230	B44066S*J230	2018-02-02	2018-05-11	2018-08-18

Ordering Code	Substitute Product	Date of Withdrawal	Deadline Last Orders	Last Shipments
B44066S3210N230	B44066S*J230	2018-02-02	2018-05-11	2018-08-18
B44066S1810N230	B44066S*J230	2018-02-02	2018-05-11	2018-08-18

For further information please contact your nearest EPCOS sales office, which will also support you in selecting a suitable substitute. The addresses of our worldwide sales network are presented at www.epcos.com/sales.

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 for B44066S****J***
- Approvals
  - cUL approval
  - CCC (China Compulsory Certification) up to 75 kvar

B44066S….J230/J110

B44066S9010J230

B44066S….N230/N110

B44066S1810J230/J110

B44066S1810N230/N110

Series B44066S…J230/J110 for conventional PFC-systems without reactors

Features	
Resistors	Tamper-proof and protected
Leading contacts	With wiper function
Pre-contacts	Snap function
Aux-contacts	For all types
Usage	In applications with or without reactors

Series B44066S…N230/N110 for de-tuned PFC-systems with reactors

Features	
Aux-contacts	For all types
Usage	In applications with reactors only

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:					
■ Type …N…	kg	0.26	0.51	0.51	0.88
■ Type …J…		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 Hz[1]):					
■ 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 Hz[1)]:					
■ 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

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.

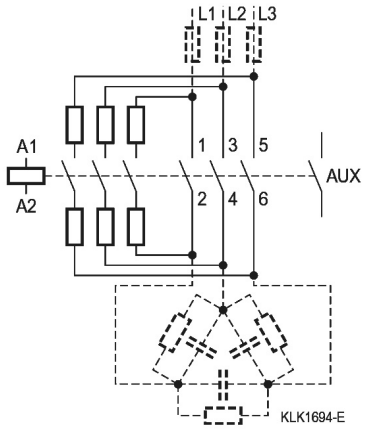
2) Operating range of magnet-coils 0.85 V_s (min. value of rated control voltage) up to 1.1 • V_s (max. value of rated control voltage).

Type/Main contacts		B44066S6210…	B44066S7410…	B44066S9010…	B44066S9910…
Weight including auxiliary contact: ■ Type …N… ■ Type …J…	kg	 0.88 1.03	 0.88 1.03	 2.2 2.3	 2.23 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

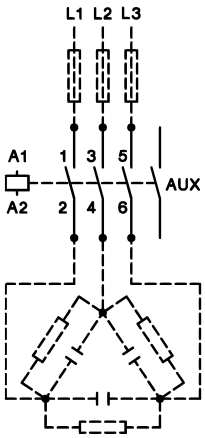
1) Suitable at 690 V for: earthed-neutral systems, overvoltage category I to IV, pollution degree 3 (standard-industry): V_{imp} = 8 kV. Data for other conditions on request.

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).

Connection diagram for all types B44066S…J…
(with preload resistors). B44066S1810J230, B44066S9010J230 and B44066S9910J230 with resistors inside housing.

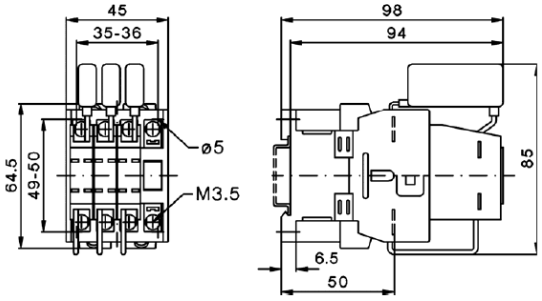


Connection diagram for all types B44066S…N…
(without preload resistors)

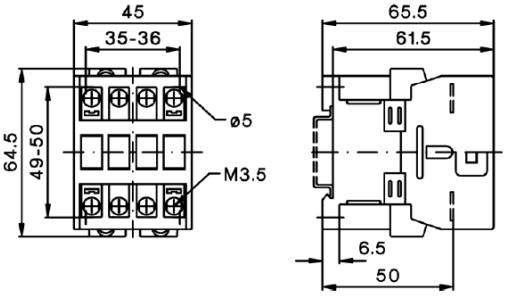


Dimensional drawings

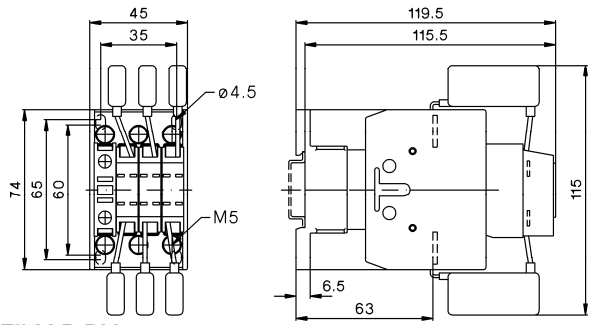
B44066S1810J230, B44066S1810J110
with wires on the bottom only



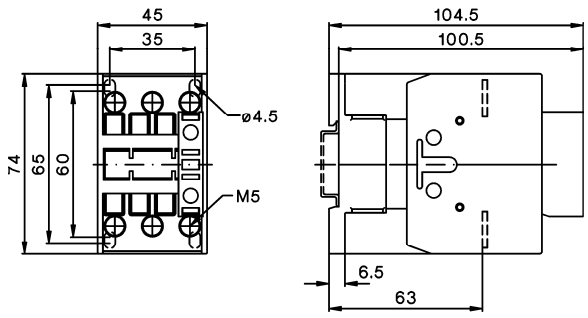
B44066S1810N230



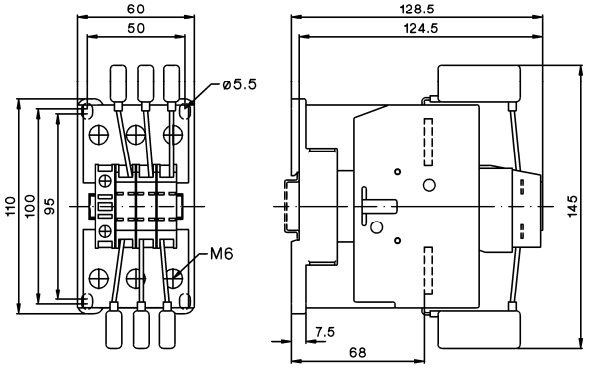
B44066S2410J230, B44066S3210J230
B44066S2410J110, B44066S3210J110



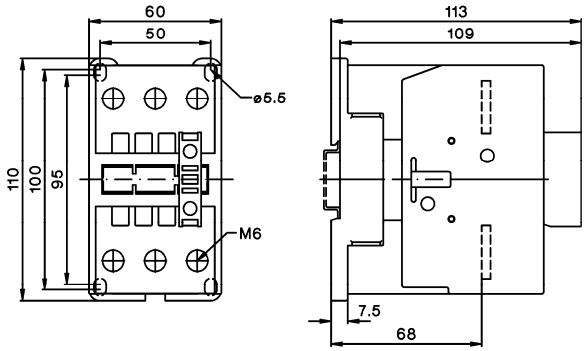
B44066S2410N230, B44066S3210N230



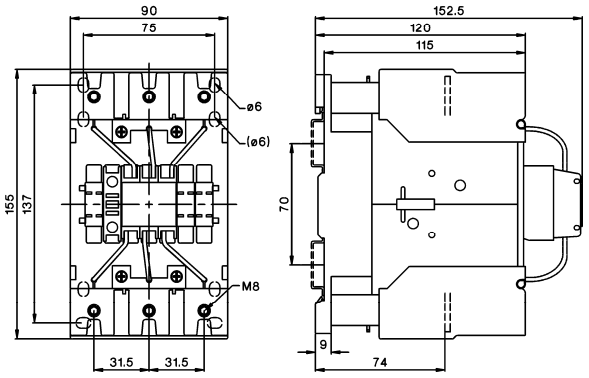
B44066S5010J230, B44066S6210J230, B44066S6210J110, B44066S7410J230, B44066S7410J110



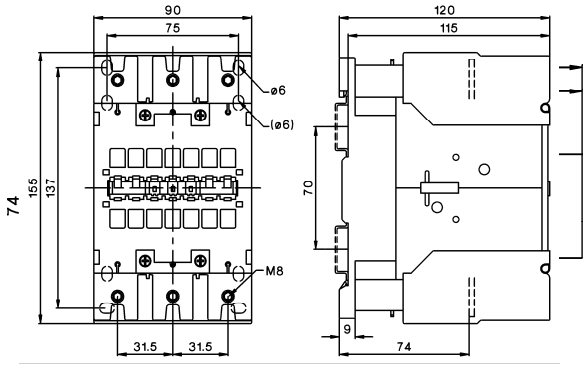
B44066S5010N230, B44066S6210N230, B44066S7410N230



B44066S9010J230, B44066S9910J230



B44066S9010N230, B44066S9910N230



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).

Important notes

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.
2. We also point out that **in individual cases, a malfunction of electronic components or failure before the end of their usual service life cannot be completely ruled out in the current state of the art, even if they are operated as specified.** In customer applications requiring a very high level of operational safety and especially in customer applications in which the malfunction or failure of an electronic component could endanger human life or health (e.g. in accident prevention or life-saving systems), it must therefore be ensured by means of suitable design of the customer application or other action taken by the customer (e.g. installation of protective circuitry or redundancy) that no injury or damage is sustained by third parties in the event of malfunction or failure of an electronic component.
3. **The warnings, cautions and product-specific notes must be observed.**
4. In order to satisfy certain technical requirements, **some of the products described in this publication may contain substances subject to restrictions in certain jurisdictions (e.g. because they are classed as hazardous)**. Useful information on this will be found in our Material Data Sheets on the Internet (www.tdk-electronics.tdk.com/material). Should you have any more detailed questions, please contact our sales offices.
5. We constantly strive to improve our products. Consequently, **the products described in this publication may change from time to time**. The same is true of the corresponding product specifications. Please check therefore to what extent product descriptions and specifications contained in this publication are still applicable before or when you place an order.

   We also **reserve the right to discontinue production and delivery of products**. Consequently, we cannot guarantee that all products named in this publication will always be available. The aforementioned does not apply in the case of individual agreements deviating from the foregoing for customer-specific products.
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7. **Our manufacturing sites serving the automotive business apply the IATF 16949 standard.** The IATF certifications confirm our compliance with requirements regarding the quality management system in the automotive industry. Referring to customer requirements and customer specific requirements (“CSR”) TDK always has and will continue to have the policy of respecting individual agreements. Even if IATF 16949 may appear to support the acceptance of unilateral requirements, we hereby like to emphasize that **only requirements mutually agreed upon can and will be implemented in our Quality Management System.** For clarification purposes we like to point out that obligations from IATF 16949 shall only become legally binding if individually agreed upon.
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