

Product designation				Power contactor
Product type designation				BF09
<b>Contact characteristics</b>				
Number of poles	Nr.			4
Rated insulation voltage $U_i$ IEC/EN	V			690
Rated impulse withstand voltage $U_{imp}$	kV			6
Operational frequency	min	Hz	25	
	max	Hz	400	
IEC Conventional free air thermal current $I_{th}$	A			25
Operational current $I_e$	AC-1 ( $\leq 40^\circ\text{C}$ )	A	25	
	AC-1 ( $\leq 55^\circ\text{C}$ )	A	20	
	AC-1 ( $\leq 70^\circ\text{C}$ )	A	18	
	AC-3 ( $\leq 440\text{V} \leq 55^\circ\text{C}$ )	A	9	
	AC-4 (400V)	A	4.9	
Rated operational power AC-1 ( $T \leq 40^\circ\text{C}$ )	230V	kW	9.5	
	400V	kW	16	
	500V	kW	21	
	690V	kW	27	
IEC max current $I_e$ in DC1 with $L/R \leq 1\text{ms}$ with 1 poles in series	$\leq 24\text{V}$	A	15	
	48V	A	13	
	75V	A	12	
	110V	A	6	
	220V	A	–	
IEC max current $I_e$ in DC1 with $L/R \leq 1\text{ms}$ with 2 poles in series	$\leq 24\text{V}$	A	18	
	48V	A	18	
	75V	A	17	
	110V	A	12	
	220V	A	1	
IEC max current $I_e$ in DC1 with $L/R \leq 1\text{ms}$ with 3 poles in series	$\leq 24\text{V}$	A	20	
	48V	A	20	
	75V	A	20	
	110V	A	15	
	220V	A	10	
IEC max current $I_e$ in DC1 with $L/R \leq 1\text{ms}$ with 4 poles in series	$\leq 24\text{V}$	A	20	
	48V	A	20	
	75V	A	20	
	110V	A	16	
	220V	A	12	
IEC max current $I_e$ in DC3-DC5 with $L/R \leq 15\text{ms}$ with 1 poles in series	$\leq 24\text{V}$	A	10	
	48V	A	9	
	75V	A	8	
	110V	A	2	
	220V	A	–	
IEC max current $I_e$ in DC3-DC5 with $L/R \leq 15\text{ms}$ with 2 poles in series	$\leq 24\text{V}$	A	13	

	48V	A	11
	75V	A	10
	110V	A	7
	220V	A	2
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IEC max current I <sub>e</sub> in DC3-DC5 with L/R ≤ 15ms with 3 poles in series			
	≤24V	A	15
	48V	A	15
	75V	A	13
	110V	A	11
	220V	A	6
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IEC max current I <sub>e</sub> in DC3-DC5 with L/R ≤ 15ms with 4 poles in series			
	≤24V	A	15
	48V	A	15
	75V	A	15
	110V	A	12
	220V	A	7
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Short-time allowable current for 10s (IEC/EN60947-1)		A	150
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Protection fuse			
	gG (IEC)	A	25
	aM (IEC)	A	10
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Making capacity (RMS value)		A	90
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Breaking capacity at voltage			
	440V	A	72
	500V	A	72
	690V	A	71
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Resistance per pole (average value)		mΩ	2.5
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Power dissipation per pole (average value)			
	I <sub>th</sub>	W	1.6
	AC3	W	0.2
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Tightening torque for terminals			
	min	Nm	1.5
	max	Nm	1.8
	min	lbin	1.1
	max	lbin	1.5
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Tightening torque for coil terminal			
	min	Nm	0.8
	max	Nm	1
	min	lbin	Prodotti finiti
	max	lbin	Prodotti finiti
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Max number of wires simultaneously connectable		Nr.	2
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Conductor section			
Flexible w/o lug conductor section			
	min	mm <sup>2</sup>	1
	max	mm <sup>2</sup>	6
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Flexible c/w lug conductor section			
	min	mm <sup>2</sup>	1
	max	mm <sup>2</sup>	4
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Flexible with insulated spade lug conductor section			
	min	mm <sup>2</sup>	1
	max	mm <sup>2</sup>	4
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Power terminal protection according to IEC/EN 60529		IP20 when wired	

**Mechanical features**

Operating position

	normal allowable		Vertical plan ±30°
Fixing			Screw / DIN rail 35mm
Weight		g	350
<b>Operations</b>			
Mechanical life		cycles	20000000
Electrical life		cycles	2000000
<b>Safety related data</b>			
Performance level B10d according to EN/ISO 13489-1			
	rated load mechanical load	cycles	2000000
		cycles	20000000
Mirror contacts according to IEC/EN 60947-4-1			Yes
EMC compatibility			Yes
Rated AC voltage at 60Hz		V	230
<b>AC coil operating</b>			
AC operating voltage			
of 60Hz coil powered at 60Hz			
pick-up			
	min	%Us	80
	max	%Us	110
drop-out			
	min	%Us	20
	max	%Us	55
AC average coil consumption at 20°C			
of 50/60Hz coil powered at 50Hz			
	in-rush holding	VA	75
		VA	9
of 50/60Hz coil powered at 60Hz			
	in-rush holding	VA	70
		VA	6.5
of 60Hz coil powered at 60Hz			
	in-rush holding	VA	75
		VA	9
Dissipation at holding ≤20°C 50Hz		W	2.5
<b>Max cycles frequency</b>			
Mechanical operation		cycles/h	3600
<b>Operating times</b>			
Average time for Us control in AC			
Closing NO			
	min	ms	8
	max	ms	24
Opening NO			
	min	ms	10
	max	ms	20
Closing NC			
	min	ms	14
	max	ms	28
Opening NC			
	min	ms	7
	max	ms	18

**UL technical data**

Full-load current (FLA) for three-phase AC motor

		at 480V	A	7.6
		at 600V	A	0.375
<b>Yielded mechanical performance</b>				
	for single-phase AC motor			
	110/120V	HP		0.75
	230V	HP		2
	for three-phase AC motor			
	200/208V	HP		3
	220/230V	HP		3
	460/480V	HP		5
	575/600V	HP		7.5
<b>General USE</b>				
	Contactor			
		AC current	A	25
<b>Short-circuit protection fuse, 600V</b>				
	High fault			
		Short circuit current	kA	100
		Fuse rating	A	30
		Fuse class		J
	Standard fault			
		Short circuit current	kA	5
		Fuse rating	A	60
<b>Ambient conditions</b>				
<b>Temperature</b>				
	Operating temperature			
		min	°C	-50
		max	°C	70
	Storage temperature			
		min	°C	-60
		max	°C	80
	Max altitude			
			m	3000
<b>Resistance &amp; Protection</b>				
	Pollution degree			
				3
<b>Dimensions</b>				
<b>Wiring diagrams</b>				
<b>Certifications and compliance</b>				
<b>Compliance</b>				
	CSA C22.2 n° 60947-1			
	CSA C22.2 n° 60947-4-1			
	IEC/EN 60947-1			
	IEC/EN 60947-4-1			
	UL 60947-1			
	UL 60947-4-1			
<b>Certificates</b>				
	CCC			
	cULus			
	EAC			
<b>ETIM classification</b>				
	ETIM 8.0			
				EC000066 - Power contactor, AC switching