

Product designation		Power contactor
Product type designation		BF09
Contact characteristics		
Number of poles	Nr.	3
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-3 ($T \leq 55^\circ\text{C}$)		
	230V	kW 2.2
	400V	kW 4.2
	415V	kW 4.5
	440V	kW 4.8
	500V	kW 5.5
	690V	kW 7.5
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 ≤ 1ms with 1 poles in series				
		≤24V	A	15
		48V	A	13
		75V	A	12
		110V	A	6
		220V	A	–
IEC max current I _e in DC1 with L/R ≤ 1ms with 2 poles in series				
		≤24V	A	18
		48V	A	18
		75V	A	17
		110V	A	12
		220V	A	1
IEC max current I _e in DC1 with L/R ≤ 1ms with 3 poles in series				
		≤24V	A	20
		48V	A	20
		75V	A	20
		110V	A	15
		220V	A	10
IEC max current I _e in DC1 with L/R ≤ 1ms with 4 poles in series				
		≤24V	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 ≤ 15ms with 1 poles in series				
		≤24V	A	10
		48V	A	9

	75V	A	8
	110V	A	2
	220V	A	—
IEC max current I _e in DC3-DC5 with L/R ≤ 15ms with 2 poles in series			
	≤24V	A	13
	48V	A	11
	75V	A	10
	110V	A	7
	220V	A	2
IEC max current I _e 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
IEC max current I _e 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
Short-time allowable current for 10s (IEC/EN60947-1)		A	150
Protection fuse			
	gG (IEC)	A	25
	aM (IEC)	A	10
Making capacity (RMS value)		A	90
Breaking capacity at voltage			
	440V	A	72
	500V	A	72
	690V	A	71

Resistance per pole (average value)	mΩ	2.5
Power dissipation per pole (average value)		
Ith	W	1.6
AC-3	W	0.2
Tightening torque for terminals		
min	Nm	1.5
max	Nm	1.8
min	Ibin	1.1
max	Ibin	1.5
Tightening torque for coil terminal		
min	Nm	0.8
max	Nm	1
min	Ibin	0.8
max	Ibin	0.74
Max number of wires simultaneously connectable	Nr.	2
Conductor section		
AWG/Kcmil		
max		10
Flexible w/o lug conductor section		
min	mm ²	1
max	mm ²	6
Flexible c/w lug conductor section		
min	mm ²	1
max	mm ²	4
Flexible with insulated spade lug conductor section		
min	mm ²	1
max	mm ²	4
Power terminal protection according to IEC/EN 60529		IP20 when properly wired
Mechanical features		

Operating position			
	normal		Vertical plan
	allowable		$\pm 30^\circ$
Fixing			Screw / DIN rail 35mm
Weight		g	490
Auxiliary contact characteristics			
Thermal current I _{th}		A	10
IEC/EN 60947-5-1 designation			A600 - P600
Operating current AC15			
	230V	A	3
	400V	A	1.9
	500V	A	1.4
Operating current DC12			
	110V	A	5.7
Operating current DC13			
	24V	A	5.7
	48V	A	2.9
	60V	A	2.3
	110V	A	1.25
	125V	A	1.1
	220V	A	0.55
	600V	A	0.2
Operations			
Mechanical life		cycles	20000000
Electrical life		cycles	2000000
Safety related data			
Performance level B10d according to EN/ISO 13489-1			
	rated load	cycles	2000000
	mechanical load	cycles	20000000

EMC compatibility		yes
DC coil operating		
DC rated control voltage	V	24
DC operating voltage		
pick-up		
	min	%Us 70
	max	%Us 125
drop-out		
	min	%Us 10
	max	%Us 40
Average coil consumption $\leq 20^{\circ}\text{C}$		
	in-rush	W 5.4
	holding	W 5.4
Max cycles frequency		
Mechanical operation	cycles/h	3600
Operating times		
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
in DC				
	Closing NO			
		min	ms	54
		max	ms	66
	Opening NO			
		min	ms	14
		max	ms	17
UL technical data				
Rated operational voltage AC (UL)			V	600
Full-load current (FLA) for three-phase AC motor				
		at 480V	A	7.6
		at 600V	A	9
Yielded mechanical performance				
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
General USE				
Contactor				
		AC current	A	25
Auxiliary contacts				
		AC voltage	V	600
		AC current	A	10
		DC voltage	V	250

		DC current	A	1
Short-circuit protection fuse, 600V				
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
Contact rating of auxiliary contacts according to UL				A600 - P600
Ambient conditions				
Temperature				
Operating temperature				
		min	°C	-50
		max	°C	70
Storage temperature				
		min	°C	-60
		max	°C	80
Max altitude			m	3000
Resistance & Protection				
Pollution degree				3
ETIM classification				
ETIM 8.0				EC000066 - Power contactor, AC switching