



Product designation				Power contactor
Product type designation				BF12
<b>Contact characteristics</b>				
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			28
Operational current $I_e$	AC-1 ( $\leq 40^\circ\text{C}$ )	A	28	
	AC-1 ( $\leq 55^\circ\text{C}$ )	A	23	
	AC-1 ( $\leq 70^\circ\text{C}$ )	A	20	
	AC-3 ( $\leq 440\text{V} \leq 55^\circ\text{C}$ )	A	12	
	AC-4 (400V)	A	7.9	
Rated operational power AC-3 ( $T \leq 55^\circ\text{C}$ )	230V	kW	3.2	
	400V	kW	5.7	
	415V	kW	6.2	
	440V	kW	5.5	
	500V	kW	5	
	690V	kW	5	
Rated operational power AC-1 ( $T \leq 40^\circ\text{C}$ )	230V	kW	10	
	400V	kW	18	
	500V	kW	23	
	690V	kW	32	
IEC max current $I_e$ in DC1 with $L/R \leq 1\text{ms}$ with 1 poles in series	$\leq 24\text{V}$	A	17	
	48V	A	15	
	75V	A	13	
	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	20	
	48V	A	20	
	75V	A	18	
	110V	A	13	
	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	22	
	48V	A	22	
	75V	A	20	
	110V	A	16	

	220V	A	11
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	12
	48V	A	11
	75V	A	10
	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	15
	48V	A	13
	75V	A	12
	110V	A	8
	220V	A	2
IEC max current $I_e$ in DC3-DC5 with $L/R \leq 15\text{ms}$ with 3 poles in series			
	$\leq 24\text{V}$	A	18
	48V	A	18
	75V	A	15
	110V	A	12
	220V	A	6
IEC max current $I_e$ in DC3-DC5 with $L/R \leq 15\text{ms}$ with 4 poles in series			
	$\leq 24\text{V}$	A	15
	48V	A	15
	75V	A	15
	110V	A	16
	220V	A	7
Short-time allowable current for 10s (IEC/EN60947-1)		A	150
Protection fuse			
	gG (IEC)	A	32
	aM (IEC)	A	12
Making capacity (RMS value)		A	120
Breaking capacity at voltage			
	440V	A	96
	500V	A	96
	690V	A	94
Resistance per pole (average value)		m $\Omega$	2.5
Power dissipation per pole (average value)			
	$I_{th}$	W	2
	AC3	W	0.4
Tightening torque for terminals			
	min	Nm	1.5
	max	Nm	1.8
	min	lbin	1.1
	max	lbin	1.5
Tightening torque for coil terminal			
	min	Nm	0.8
	max	Nm	1
	min	lbin	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 <sup>2</sup>	1
	max	mm <sup>2</sup>	6
Flexible c/w lug conductor section	min	mm <sup>2</sup>	1
	max	mm <sup>2</sup>	4
Flexible with insulated spade lug conductor section	min	mm <sup>2</sup>	1
	max	mm <sup>2</sup>	4
Power terminal protection according to IEC/EN 60529			IP20 when properly wired

**Mechanical features**

Operating position	normal allowable		Vertical plan ±30°
Fixing			Screw / DIN rail 35mm
Weight		g	350
Conductor section			
AWG/kcmil conductor section	max		10

**Auxiliary contact characteristics**

Thermal current I <sub>th</sub>		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
Mirror contacts according to IEC/EN 60947-4-1			yes
EMC compatibility			yes

**AC coil operating**

Rated AC voltage at 50/60Hz	V	415
AC operating voltage		
of 50/60Hz coil powered at 50Hz		
pick-up	min %Us	80
	max %Us	110
drop-out	min %Us	20
	max %Us	55
of 50/60Hz coil powered at 60Hz		
pick-up	min %Us	85
	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 VA	75
	holding VA	9
of 50/60Hz coil powered at 60Hz		
	in-rush VA	70
	holding VA	6.5
of 60Hz coil powered at 60Hz		
	in-rush VA	75
	holding 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
<b>UL technical data</b>		
Full-load current (FLA) for three-phase AC motor		
	at 480V A	11
	at 600V A	11
Yielded mechanical performance		
for single-phase AC motor		
	110/120V HP	1
	230V HP	2
for three-phase AC motor		
	200/208V HP	5

		220/230V	HP	5
		460/480V	HP	7.5
		575/600V	HP	10
<b>General USE</b>				
	Contactor			
		AC current	A	28
	Auxiliary contacts			
		AC voltage	V	600
		AC current	A	10
		DC voltage	V	250
		DC current	A	1
<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	70
Contact rating of auxiliary contacts according to UL				A600 - P600
<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>ETIM classification</b>				
ETIM 8.0				EC000066 - Power contactor, AC switching