



Product designation				Power contactor
Product type designation				BF12
<b>Contact characteristics</b>				
Number of poles	Nr.			3
Rated insulation voltage U <sub>i</sub> IEC/EN	V			690
Rated impulse withstand voltage U <sub>imp</sub>	kV			6
Operational frequency	min	Hz	25	
	max	Hz	400	
IEC Conventional free air thermal current I <sub>th</sub>	A			28
Operational current I <sub>e</sub>	AC-1 (≤40°C)	A	28	
	AC-1 (≤55°C)	A	23	
	AC-1 (≤70°C)	A	20	
	AC-3 (≤440V ≤55°C)	A	12	
	AC-4 (400V)	A	7.9	
Rated operational power AC-3 (T≤55°C)	230V	kW	3.2	
	400V	kW	5.7	
	415V	kW	6.2	
	440V	kW	6.2	
	500V	kW	7.5	
	690V	kW	10	
Rated operational power AC-1 (T≤40°C)	230V	kW	10	
	400V	kW	18	
	500V	kW	23	
	690V	kW	32	
IEC max current I <sub>e</sub> in DC1 with L/R ≤ 1ms with 1 poles in series	≤24V	A	17	
	48V	A	15	
	75V	A	13	
	110V	A	6	
	220V	A	–	
IEC max current I <sub>e</sub> in DC1 with L/R ≤ 1ms with 2 poles in series	≤24V	A	20	
	48V	A	20	
	75V	A	18	
	110V	A	13	
	220V	A	1	
IEC max current I <sub>e</sub> in DC1 with L/R ≤ 1ms with 3 poles in series	≤24V	A	22	
	48V	A	22	
	75V	A	20	
	110V	A	16	

	220V	A	11
IEC max current I <sub>e</sub> 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 <sub>e</sub> in DC3-DC5 with L/R ≤ 15ms with 1 poles in series			
	≤24V	A	12
	48V	A	11
	75V	A	10
	110V	A	2
	220V	A	–
IEC max current I <sub>e</sub> in DC3-DC5 with L/R ≤ 15ms with 2 poles in series			
	≤24V	A	15
	48V	A	13
	75V	A	12
	110V	A	8
	220V	A	2
IEC max current I <sub>e</sub> in DC3-DC5 with L/R ≤ 15ms with 3 poles in series			
	≤24V	A	18
	48V	A	18
	75V	A	15
	110V	A	12
	220V	A	6
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	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)		mΩ	2.5
Power dissipation per pole (average value)			
	I <sub>th</sub>	W	2
	AC-3	W	0.4
Tightening torque for terminals			
	min	Nm	1.5
	max	Nm	1.8
	min	I <sub>bin</sub>	1.1
	max	I <sub>bin</sub>	1.5
Tightening torque for coil terminal			
	min	Nm	0.8
	max	Nm	1
	min	I <sub>bin</sub>	0.8

	max	I <sub>bin</sub>	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	496
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

**DC coil operating**

DC rated control voltage		V	60
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
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**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
	Closing NC	min	ms 24
		max	ms 30
	Opening NC	min	ms 47
		max	ms 57

**UL technical data**

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

General USE

Contactor	AC current	A	28
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	70

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

Dimensions



### Wiring diagrams



### Certifications and compliance

#### Compliance

CSA C22.2 n° 60947-1  
 CSA C22.2 n° 60947-4-1  
 IEC/EN/BS 60947-1  
 IEC/EN/BS 60947-4-1  
 UL 60947-1  
 UL 60947-4-1

#### Certificates

CCC

cULus

EAC

ETIM classification

ETIM 8.0

EC000066 -  
Power contactor,  
AC switching