



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 <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
	AC3	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	365
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	400
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

General USE

Contactor

AC current	A	28
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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

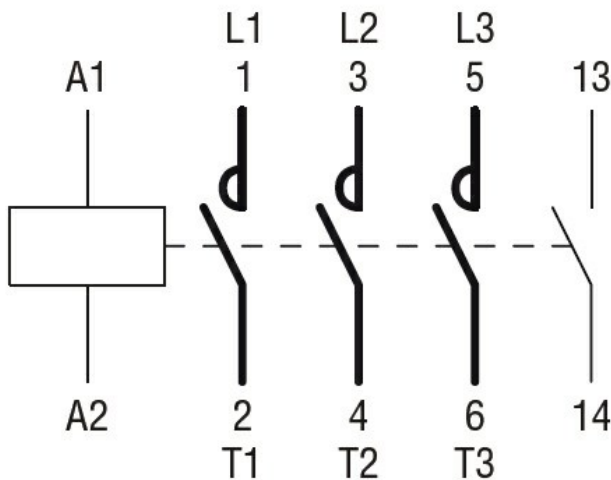
Pollution degree

3

Dimensions [mm (in)]



### 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

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cULus

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EAC

ETIM classification

ETIM 8.0

EC000066 -  
Power contactor,  
AC switching