



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 $L/R \leq 1\text{ms}$ 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 <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	10
	48V	A	9
	75V	A	8
	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	13
	48V	A	11
	75V	A	10
	110V	A	7
	220V	A	2
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
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
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)			
	I <sub>th</sub>	W	1.6
	AC-3	W	0.2
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	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	492
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	12
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**

Full-load current (FLA) for three-phase AC motor			
	at 480V	A	7.6
	at 600V	A	0.375

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
<hr/>			
Short-circuit protection fuse, 600V High fault	Short circuit current	kA	100
	Fuse rating	A	30
	Fuse class		J
<hr/>			
Standard fault	Short circuit current	kA	5
	Fuse rating	A	60
<hr/>			
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

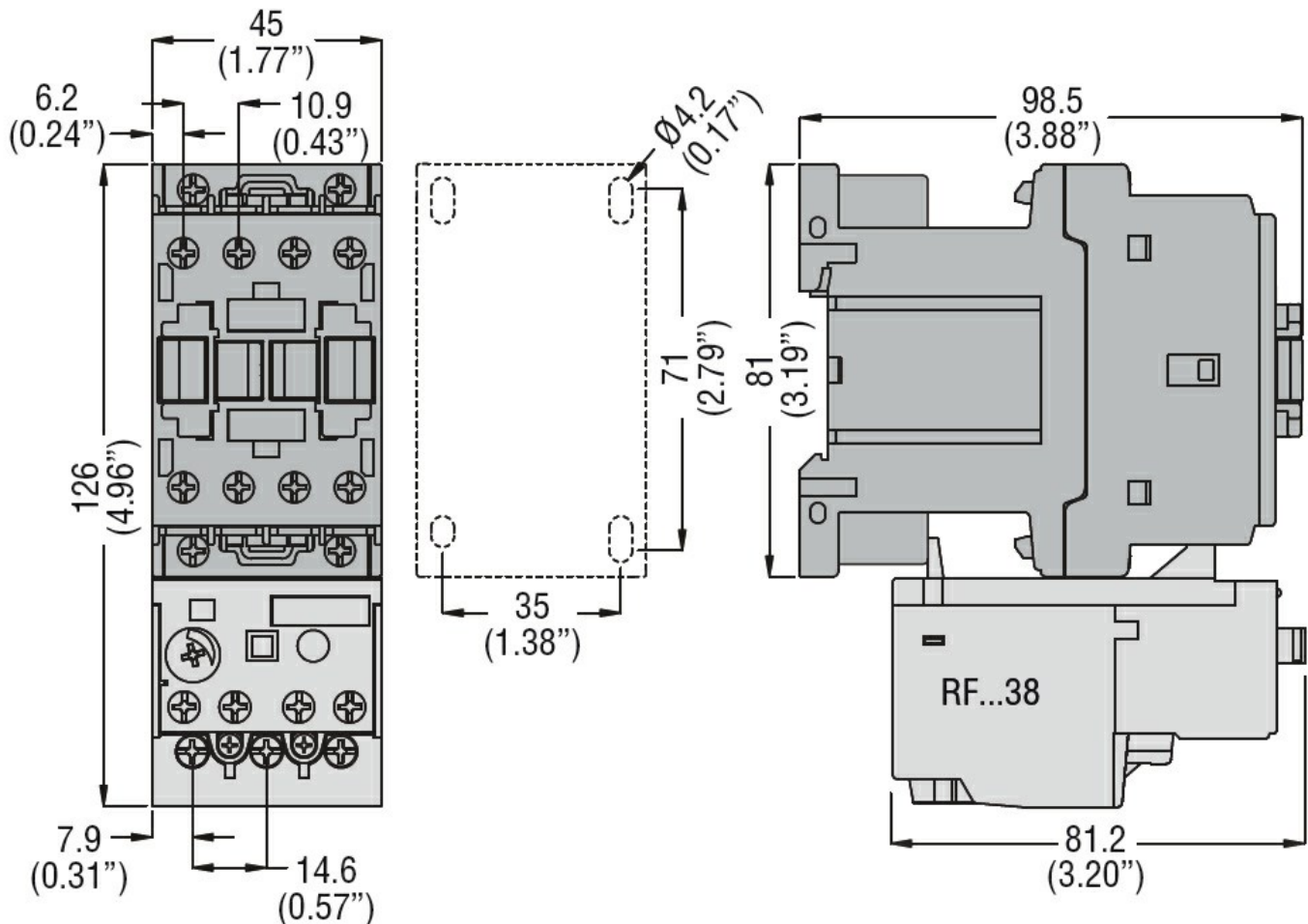
m	3000
---	------

**Resistance & Protection**

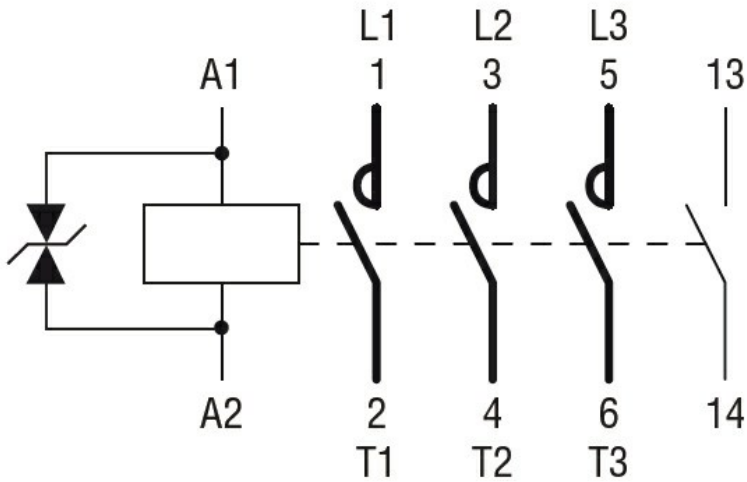
Pollution degree

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