



Product designation Power contactor  
Product type designation BF09

**Contact characteristics**

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	25
Operational current I <sub>e</sub>	AC-1 (≤40°C)	A 25
	AC-1 (≤55°C)	A 20
	AC-1 (≤70°C)	A 18
	AC-3 (≤440V ≤55°C)	A 9
	AC-4 (400V)	A 4.9
Rated operational power AC-3 (T≤55°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≤40°C)	230V	kW 9.5
	400V	kW 16
	500V	kW 21
	690V	kW 27
IEC max current I <sub>e</sub> 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 <sub>e</sub> 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 <sub>e</sub> 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
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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
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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	–
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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
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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
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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
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Short-time allowable current for 10s (IEC/EN60947-1)		A	150
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Protection fuse			
	gG (IEC)	A	25
	aM (IEC)	A	10
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Making capacity (RMS value)		A	90
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Breaking capacity at voltage			
	440V	A	72
	500V	A	72
	690V	A	71
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Resistance per pole (average value)		mΩ	2.5
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Power dissipation per pole (average value)			
	I <sub>th</sub>	W	1.6
	AC-3	W	0.2
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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
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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	500
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**

AC operating voltage

of 50/60Hz coil powered at 50Hz  
drop-out

max %Us 55

DC coil operating

DC rated control voltage

V 48

DC operating voltage

pick-up

min %Us 80

max %Us 110

drop-out

min %Us 10

max %Us 40

Average coil consumption  $\leq 20^{\circ}\text{C}$

in-rush W 2.4

holding W 2.4

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 75

max ms 91

Opening NO

min ms 15

max ms 19

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

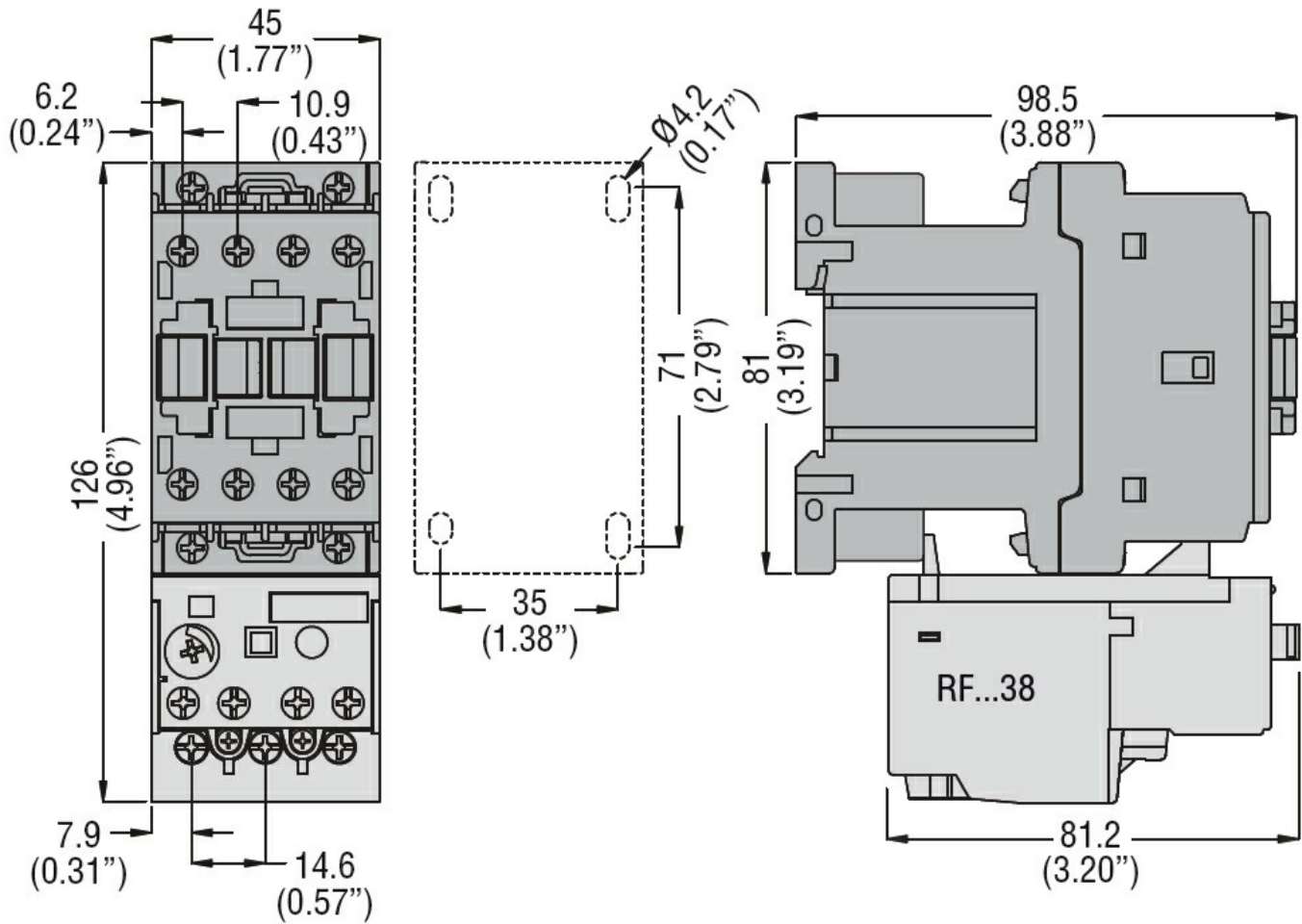
220/230V HP 3

460/480V HP 5

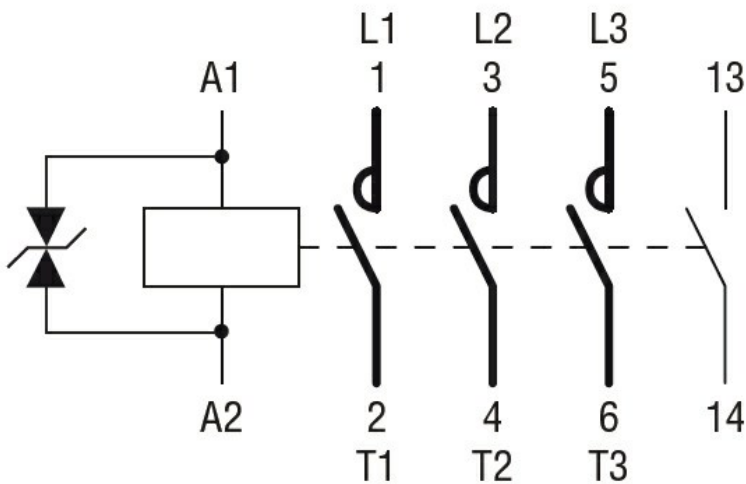
575/600V HP 7.5

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
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
<b>Ambient conditions</b>			
Temperature			
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>Dimensions</b>			



### 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