



Power contactor
BF09

Product designation

Product type designation

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
<hr/>			
IEC max current I_e in DC1 with $L/R \leq 1$ ms with 4 poles in series			
	≤ 24 V	A	20
	48V	A	20
	75V	A	20
	110V	A	16
	220V	A	12
<hr/>			
IEC max current I_e in DC3-DC5 with $L/R \leq 15$ ms with 1 poles in series			
	≤ 24 V	A	10
	48V	A	9
	75V	A	8
	110V	A	2
	220V	A	–
<hr/>			
IEC max current I_e in DC3-DC5 with $L/R \leq 15$ ms with 2 poles in series			
	≤ 24 V	A	13
	48V	A	11
	75V	A	10
	110V	A	7
	220V	A	2
<hr/>			
IEC max current I_e in DC3-DC5 with $L/R \leq 15$ ms with 3 poles in series			
	≤ 24 V	A	15
	48V	A	15
	75V	A	13
	110V	A	11
	220V	A	6
<hr/>			
IEC max current I_e in DC3-DC5 with $L/R \leq 15$ ms with 4 poles in series			
	≤ 24 V	A	15
	48V	A	15
	75V	A	15
	110V	A	12
	220V	A	7
<hr/>			
Short-time allowable current for 10s (IEC/EN60947-1)		A	150
<hr/>			
Protection fuse			
	gG (IEC)	A	25
	aM (IEC)	A	10
<hr/>			
Making capacity (RMS value)		A	90
<hr/>			
Breaking capacity at voltage			
	440V	A	72
	500V	A	72
	690V	A	71
<hr/>			
Resistance per pole (average value)		m Ω	2.5
<hr/>			
Power dissipation per pole (average value)			
	I_{th}	W	1.6
	AC3	W	0.2
<hr/>			
Tightening torque for terminals			
	min	Nm	1.5
	max	Nm	1.8
	min	lbin	1.1
	max	lbin	1.5
<hr/>			
Tightening torque for coil terminal			
	min	Nm	0.8
	max	Nm	1
	min	lbin	0.8

	max	I _{bin}	0.74
Max number of wires simultaneously connectable		Nr.	2
Conductor section			
AWG/Kcmil	max		10
Flexible w/o lug conductor section	min	mm ²	1
	max	mm ²	6
Flexible c/w lug conductor section	min	mm ²	1
	max	mm ²	4
Flexible with insulated spade lug conductor section	min	mm ²	1
	max	mm ²	4
Power terminal protection according to IEC/EN 60529			IP20 when wired
Mechanical features			
Operating position	normal allowable		Vertical plan ±30°
Fixing			Screw / DIN rail 35mm
Weight		g	360
Conductor section			
AWG/kcmil conductor section	max		10
Auxiliary contact characteristics			
Thermal current I _{th}		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	24

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 $\leq 20^\circ\text{C}$ 50Hz

W 2.5

DC coil operating

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

in-rush	W	5.4
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

UL technical data

Full-load current (FLA) for three-phase AC motor

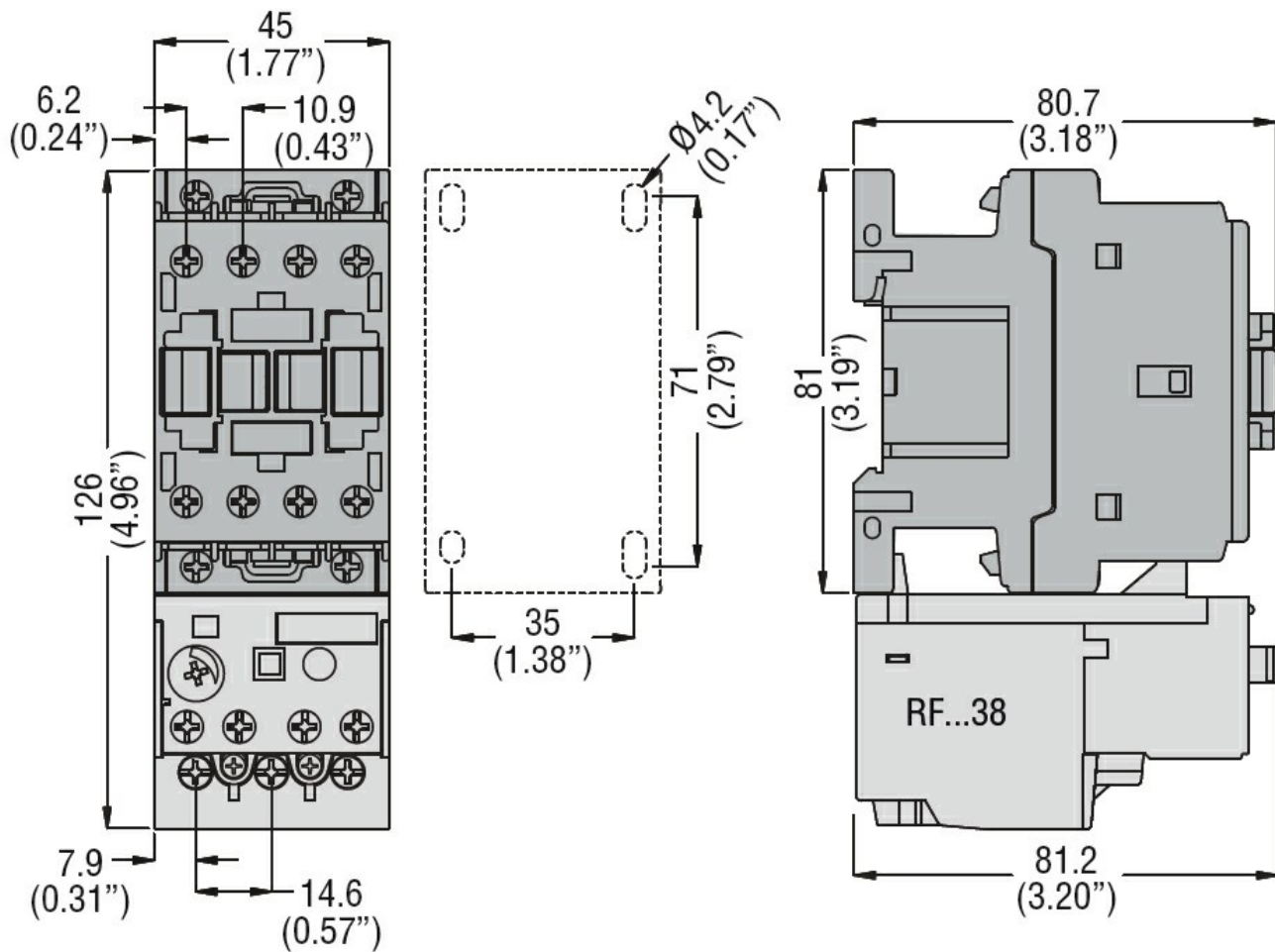
at 480V	A	7.6
at 600V	A	0.375

Yielded mechanical performance

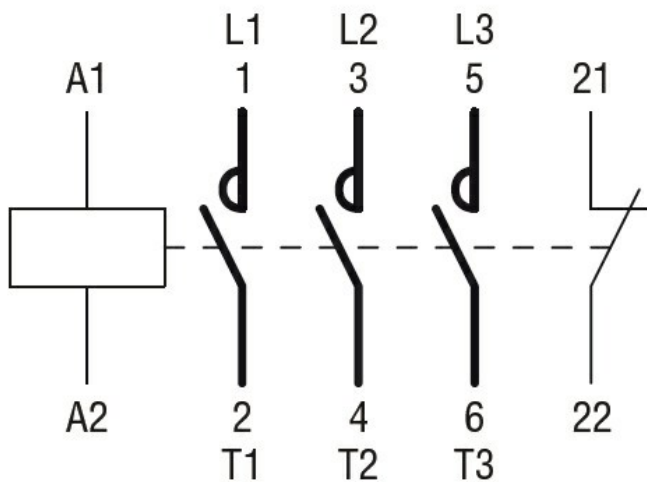
for single-phase AC motor

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
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 60947-1
IEC/EN 60947-4-1
UL 60947-1
UL 60947-4-1

Certificates

Three-pole contactor, IEC operating current I_e (AC3) = 9A, AC coil 50/60Hz, 24VAC, 1NC auxiliary contact

CCC

cULus

EAC

ETIM classification

ETIM 8.0

EC000066 -
Power contactor,
AC switching