



Product designation	Power contactor		
Product type designation	BF12		
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	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	6.2
	500V	kW	7.5
	690V	kW	10
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
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IEC max current I _e 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 _e 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	–
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IEC max current I _e 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
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IEC max current I _e 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
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IEC max current I _e 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
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Short-time allowable current for 10s (IEC/EN60947-1)		A	150
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Protection fuse			
	gG (IEC)	A	32
	aM (IEC)	A	12
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Making capacity (RMS value)		A	120
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Breaking capacity at voltage			
	440V	A	96
	500V	A	96
	690V	A	94
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Resistance per pole (average value)		mΩ	2.5
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Power dissipation per pole (average value)			
	I _{th}	W	2
	AC-3	W	0.4
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Tightening torque for terminals			
	min	Nm	1.5
	max	Nm	1.8
	min	I _{bin}	1.1
	max	I _{bin}	1.5
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Tightening torque for coil terminal			
	min	Nm	0.8
	max	Nm	1
	min	I _{bin}	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 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 _{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

DC coil operating

DC rated control voltage		V	220
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

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
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Short-circuit protection fuse, 600V High fault	Short circuit current	kA	100
	Fuse rating	A	30
	Fuse class		J
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Standard fault	Short circuit current	kA	5
	Fuse rating	A	70
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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

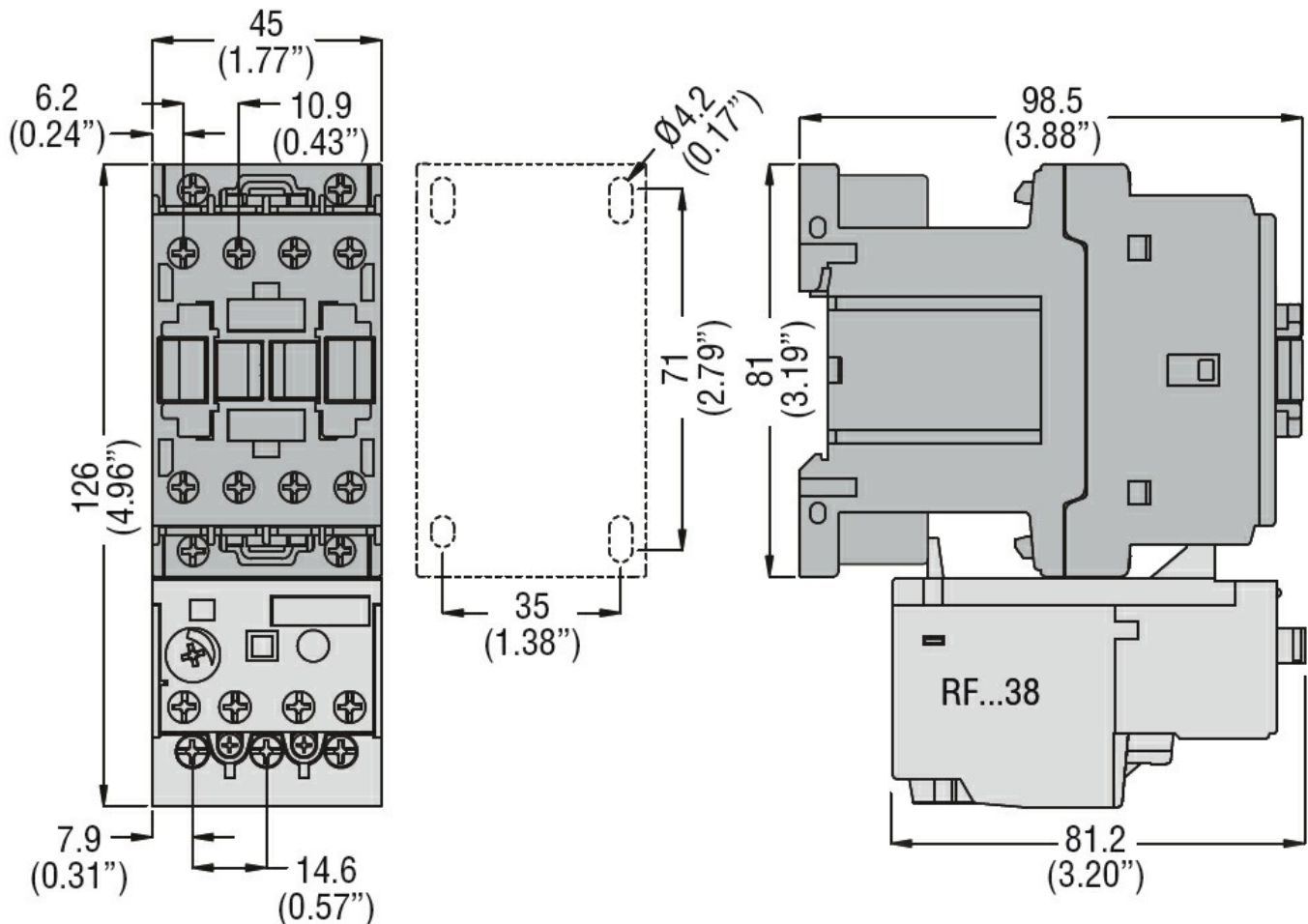
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Resistance & Protection

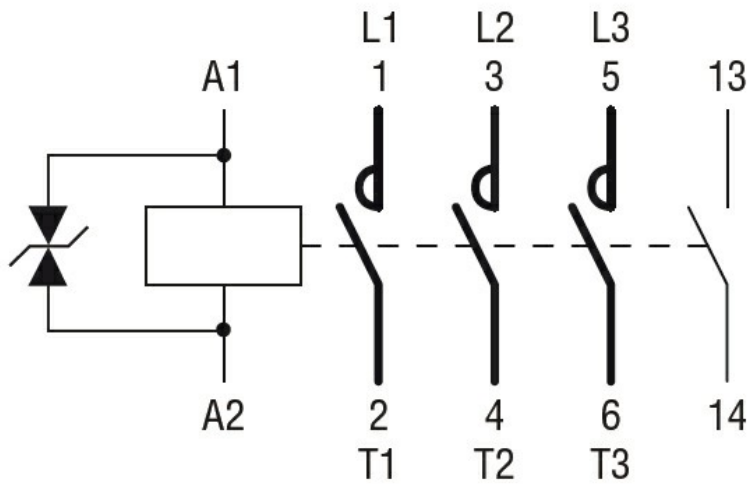
Pollution degree

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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