



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	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
IEC max current $I_e$ in DC1 with $L/R \leq 1\text{ms}$ with 4 poles in series			
	$\leq 24\text{V}$	A	20
	48V	A	20
	75V	A	20
	110V	A	16
	220V	A	12
IEC max current $I_e$ in DC3-DC5 with $L/R \leq 15\text{ms}$ with 1 poles in series			
	$\leq 24\text{V}$	A	12
	48V	A	11
	75V	A	10
	110V	A	2
	220V	A	–
IEC max current $I_e$ in DC3-DC5 with $L/R \leq 15\text{ms}$ with 2 poles in series			
	$\leq 24\text{V}$	A	15
	48V	A	13
	75V	A	12
	110V	A	8
	220V	A	2
IEC max current $I_e$ in DC3-DC5 with $L/R \leq 15\text{ms}$ with 3 poles in series			
	$\leq 24\text{V}$	A	18
	48V	A	18
	75V	A	15
	110V	A	12
	220V	A	6
IEC max current $I_e$ in DC3-DC5 with $L/R \leq 15\text{ms}$ with 4 poles in series			
	$\leq 24\text{V}$	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)		m $\Omega$	2.5
Power dissipation per pole (average value)			
	$I_{th}$	W	2
	AC-3	W	0.4
Tightening torque for terminals			
	min	Nm	1.5
	max	Nm	1.8
	min	lbin	1.1
	max	lbin	1.5
Tightening torque for coil terminal			
	min	Nm	0.8
	max	Nm	1
	min	lbin	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	487
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	24
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
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

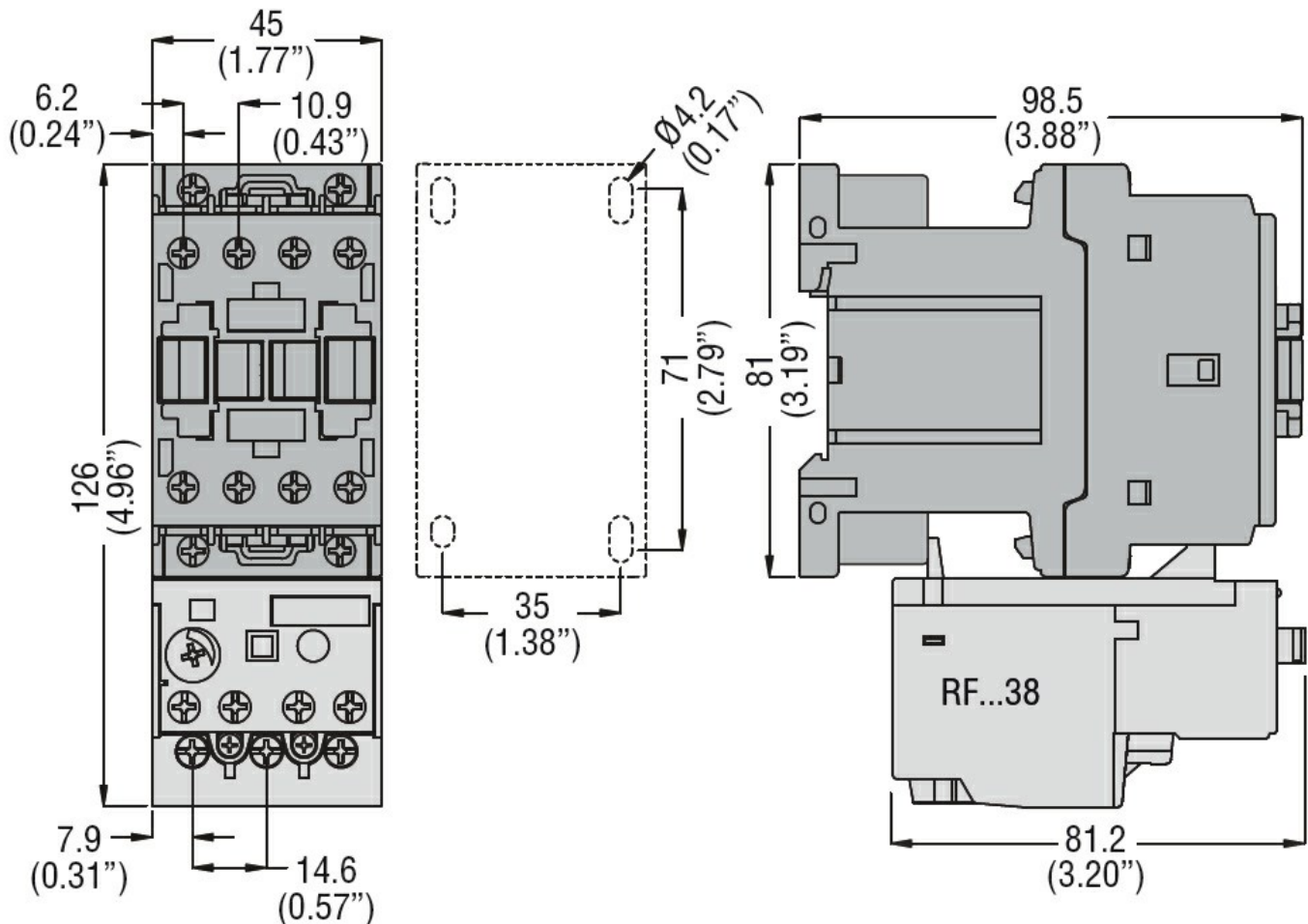
m	3000
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**Resistance & Protection**

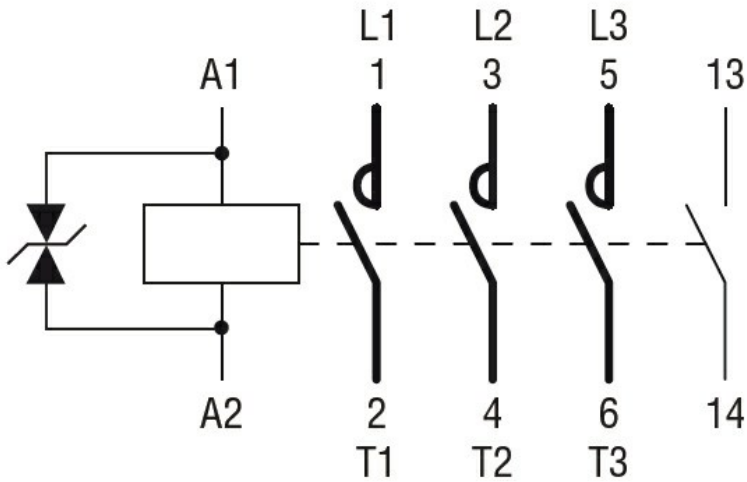
Pollution degree

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