



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	5.5
	500V kW	5
	690V kW	5
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)		mΩ	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 _{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	356

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
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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

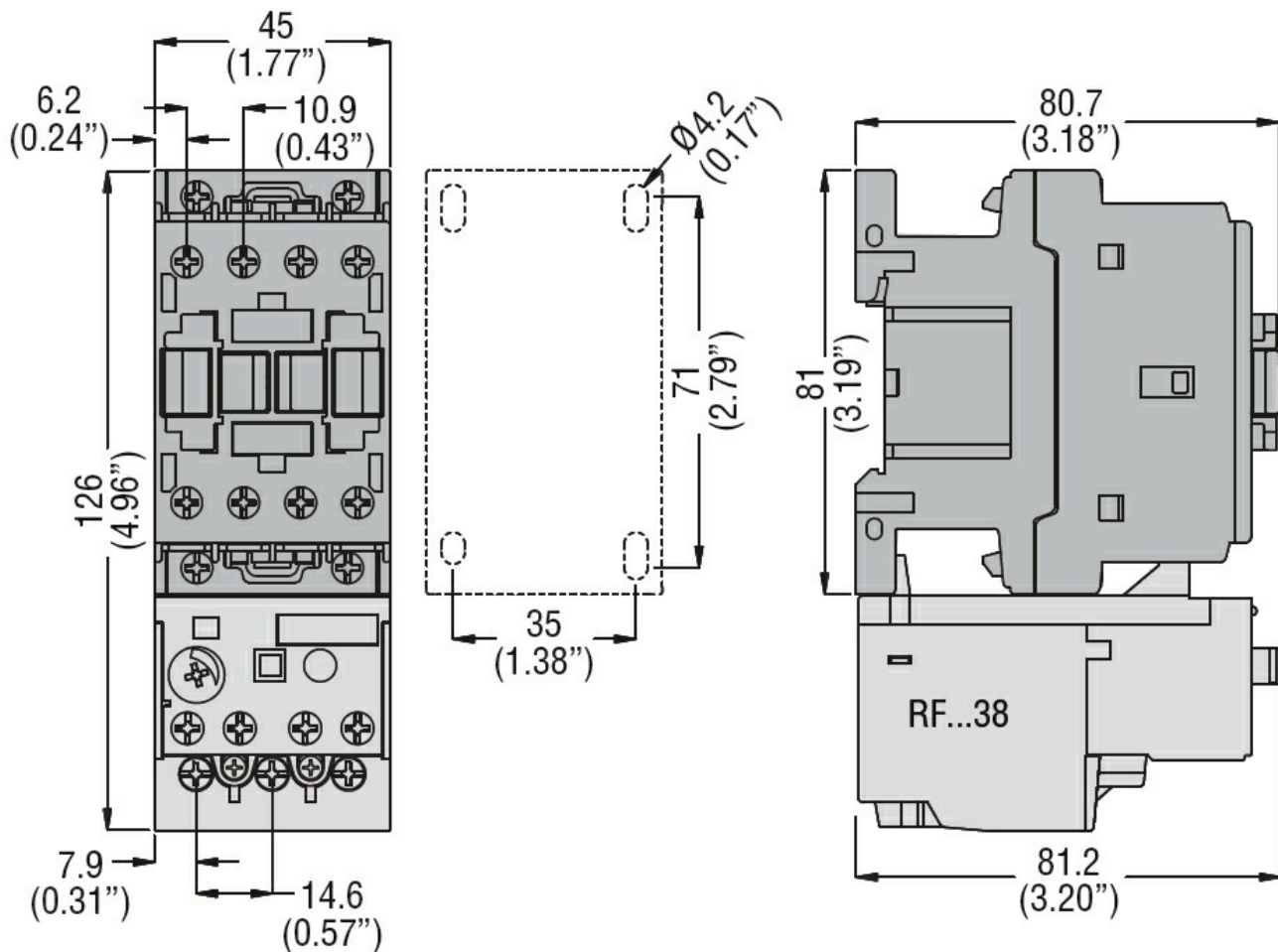
Safety related data

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

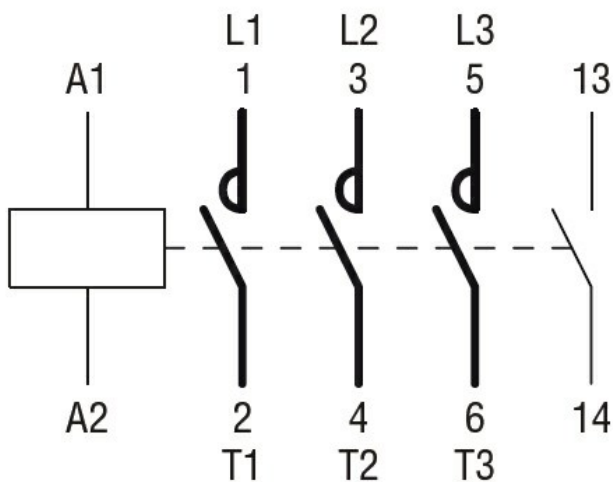
AC coil operating

Rated AC voltage at 50/60Hz	V	230
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 ≤20°C 50Hz	W	2.5
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	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
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	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
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