



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 (=40°C)	A 28
	AC-1 (=55°C)	A 23
	AC-1 (=70°C)	A 20
	AC-3 (=440V =55°C)	A 12
	AC-4 (400V)	A 7.9
Rated operational power AC-3 (T=55°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=40°C)	230V	kW 10
	400V	kW 18
	500V	kW 23
	690V	kW 32
IEC max current $I_e$ in DC1 with L/R = 1ms with 1 poles in series	=24V	A 17
	48V	A 15
	75V	A 13
	110V	A 6
	220V	A –
IEC max current $I_e$ in DC1 with L/R = 1ms with 2 poles in series	=24V	A 20
	48V	A 20
	75V	A 18
	110V	A 13
	220V	A 1
IEC max current $I_e$ in DC1 with L/R = 1ms with 3 poles in series	=24V	A 22
	48V	A 22
	75V	A 20
	110V	A 16

	220V	A	11
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
IEC max current I <sub>e</sub> 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	–
IEC max current I <sub>e</sub> 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
IEC max current I <sub>e</sub> 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
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	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?	2.5
Power dissipation per pole (average value)			
	I <sub>th</sub>	W	2
	AC3	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 wired
<b>Mechanical features</b>			
Operating position	normal allowable		Vertical plan ±30°
Fixing			Screw / DIN rail 35mm
Weight		g	354
Conductor section			
AWG/kcmil conductor section	max		10
<b>Auxiliary contact characteristics</b>			
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
<b>Operations</b>			
Mechanical life		cycles	20000000
Electrical life		cycles	2000000
<b>Safety related data</b>			
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
<b>AC coil operating</b>			
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
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### 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

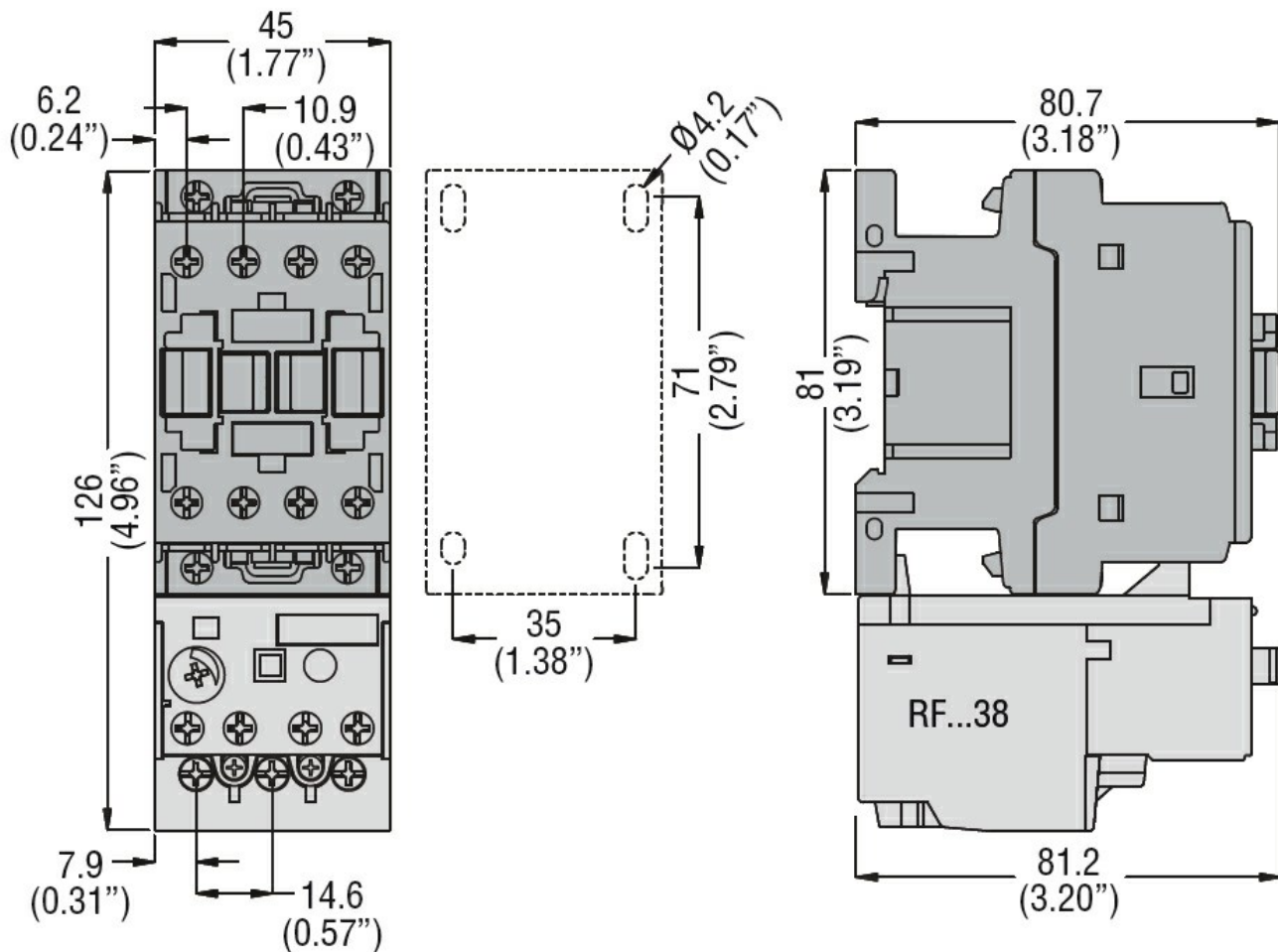
for single-phase AC motor

110/120V	HP	1
230V	HP	2

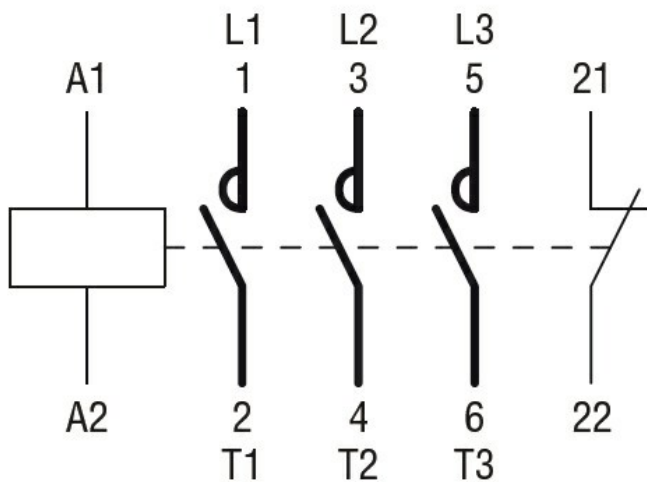
for three-phase AC motor

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

##### Certificates

CCC

cULus

EAC

ETIM classification

ETIM 8.0

EC000066 -  
Power contactor,  
AC switching