



Product designation			Power contactor
Product type designation			BF12
Contact characteristics			
Number of poles		Nr.	3
Rated insulation voltage Ui IEC/EN		V	690
Rated impulse withstand voltage Uimp		kV	6
Operational frequency			
	min	Hz	25
	max	Hz	400
IEC Conventional free air thermal current Ith		Α	28
Operational current le			
	AC-1 (≤40°C)	Α	28
	AC-1 (≤55°C)	Α	23
	AC-1 (≤70°C)	Α	20
	AC-3 (≤440V ≤55°C)	Α	12
	AC-4 (400V)	Α	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 le in DC1 with L/R ≤ 1ms with 1 poles in series			
	≤24V	Α	17
	48V	Α	15
	75V	Α	13
	110V	Α	6
	220V	Α	_
IEC max current le in DC1 with L/R ≤ 1ms with 2 poles in series			
	≤24V	Α	20
	48V	Α	20
	75V	Α	18
	110V	Α	13
	220V	Α	1
IEC max current le in DC1 with L/R ≤ 1ms with 3 poles in series			
	≤24V	Α	22
	48V	Α	22
	75V	Α	20
	110V	Α	16



	220V	Α	11
IEC max current le in DC1 with L/R ≤ 1ms with 4 poles in series	220 V		11
indication in DC1 with L/K > 11115 with 4 poles in series	<04)/	۸	20
	≤24V	A	20
	48V	A	20
	75V	A	20
	110V	Α	16
	220V	Α	12
IEC max current le in DC3-DC5 with L/R ≤ 15ms with 1 poles in series			
	≤24V	Α	12
	48V	Α	11
	75V	Α	10
	110V	Α	2
	220V	Α	
IEC max current le in DC3-DC5 with L/R ≤ 15ms with 2 poles in series			
	≤24V	Α	15
	48V	Α	13
	75V	Α	12
	110V	Α	8
	220V	Α	2
IEC max current le in DC3-DC5 with L/R ≤ 15ms with 3 poles in series			
·	≤24V	Α	18
	48V	Α	18
	75V	Α	15
	110V	Α	12
	220V	Α	6
IEC max current le in DC3-DC5 with L/R ≤ 15ms with 4 poles in series	2201	,,	
120 max danoni la in 200 200 mai 2/1 - Tomo mai 1 polos in conco	≤24V	Α	15
	48V	Α	15
	75V	A	15
	110V	A	16
	220V	A	7
Short-time allowable current for 10s (IEC/EN60947-1)	220 V	A	150
Protection fuse			130
Protection ruse	(IEO)	^	20
	gG (IEC)	A	32
	aM (IEC)	A	12
Making capacity (RMS value)		Α	120
Breaking capacity at voltage			
	440V	Α	96
	500V	Α	96
-	690V	Α	94
Resistance per pole (average value)		mΩ	2.5
Power dissipation per pole (average value)			
	Ith	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	Ibin	0.8



		max	Ibin	0.74
Max number of wires	simultaneously connectable		Nr.	2
Conductor section	1110/16			
	AWG/Kcmil			4.0
	Florible/e by a conductor a cation	max		10
	Flexible w/o lug conductor section	min	mm²	1
		min	mm²	6
	Flexible c/w lug conductor section	max	1111111	0
	r lexible 6/w lug corrudctor section	min	mm²	1
		max	mm²	4
	Flexible with insulated spade lug conductor section			<u>.</u>
		min	mm²	1
		max	mm²	4
Dower terminal protect	ation according to IEC/EN 60520			IP20 when
	ction according to IEC/EN 60529			properly wired
Mechanical features				
Operating position				
		normal		Vertical plan
		allowable		±30°
Fixing				Screw / DIN rail
				35mm
Weight Conductor section			g	356
Conductor Section	AWG/kcmil conductor section			
	AVVG/REITIII COTIQUETOT Section	max		10
Auxiliary contact chara	acteristics	max		10
Thermal current Ith			Α	10
IEC/EN 60947-5-1 de	signation			A600 - P600
IEC/EN 60947-5-1 de Operating current AC				A600 - P600
		230V	A	A600 - P600 3
		230V 400V	A A	
Operating current AC	15			3
	15	400V 500V	Α	3 1.9 1.4
Operating current AC	12	400V	Α	3 1.9
Operating current AC	12	400V 500V	A A	3 1.9 1.4 5.7
Operating current AC	12	400V 500V 110V 24V	A A A	3 1.9 1.4 5.7
Operating current AC	12	400V 500V 110V 24V 48V	A A A	3 1.9 1.4 5.7 5.7 2.9
Operating current AC	12	400V 500V 110V 24V 48V 60V	A A A A	3 1.9 1.4 5.7 5.7 2.9 2.3
Operating current AC	12	400V 500V 110V 24V 48V 60V 110V	A A A A A	3 1.9 1.4 5.7 5.7 2.9 2.3 1.25
Operating current AC	12	400V 500V 110V 24V 48V 60V 110V 125V	A A A A A	3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1
Operating current AC	12	400V 500V 110V 24V 48V 60V 110V 125V 220V	A A A A A A A	3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55
Operating current ACCOPERATION OPERATION CURRENT DCCOPERATION CURRENT	12	400V 500V 110V 24V 48V 60V 110V 125V	A A A A A	3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1
Operating current AC	12	400V 500V 110V 24V 48V 60V 110V 125V 220V	A A A A A A A	3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55
Operating current ACCO Operating current DCCO Operating current DCCO Operating current DCCO	12	400V 500V 110V 24V 48V 60V 110V 125V 220V	A A A A A A A Cycles	3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2
Operating current ACCO Operating current DCCO Operating current DCCO Operations Operations Mechanical life	12	400V 500V 110V 24V 48V 60V 110V 125V 220V	A A A A A A A	3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2
Operating current ACCO Operating current DCCO Operating current DCCO Operations Mechanical life Electrical life Safety related data	12	400V 500V 110V 24V 48V 60V 110V 125V 220V	A A A A A A A Cycles	3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2
Operating current ACCO Operating current DCCO Operating current DCCO Operations Mechanical life Electrical life Safety related data	12	400V 500V 110V 24V 48V 60V 110V 125V 220V	A A A A A A A Cycles	3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2
Operating current ACCO Operating current DCCO Operating current DCCO Operations Mechanical life Electrical life Safety related data	12 13 Od according to EN/ISO 13489-1	400V 500V 110V 24V 48V 60V 110V 125V 220V 600V	A A A A A A A Cycles cycles	3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 20000000
Operating current ACCOOPERATION COPERATION CURRENT DCCOOPERATION COPERATION C	12 13 Od according to EN/ISO 13489-1	400V 500V 110V 24V 48V 60V 110V 125V 220V 600V	A A A A A A A Cycles cycles	3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 20000000 20000000
Operating current ACCOOPERATION OPERATIONS  Operations  Mechanical life  Electrical life  Safety related data  Performance level B1	12 13 0d according to EN/ISO 13489-1	400V 500V 110V 24V 48V 60V 110V 125V 220V 600V	A A A A A A A Cycles cycles	3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 20000000 20000000 20000000
Operating current ACCO Operating current DCCO Operating current DCCO Operations Mechanical life Electrical life Safety related data Performance level B1  Mirror contats accordi	12 13 0d according to EN/ISO 13489-1	400V 500V 110V 24V 48V 60V 110V 125V 220V 600V	A A A A A A A Cycles cycles	3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 2000000 2000000 2000000 yes



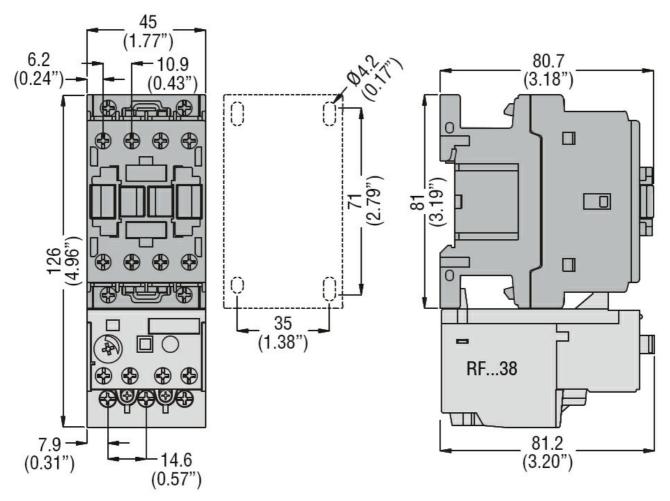
Rated AC voltage at 5	50/60Hz			V	230
AC operating voltage	of FO/60Uz as:1 = 2	and at EOLI-			
	of 50/60Hz coil power	pick-up			
		pick-up	min	%Us	80
			max	%Us	110
		drop-out		,,,,,	
		'	min	%Us	20
			max	%Us	55
	of 50/60Hz coil power	ed at 60Hz			
		pick-up			
			min	%Us	85
			max	%Us	110
		drop-out			
			min	%Us	20
			max	%Us	55
C average coil cons		rad at EOU-			
	of 50/60Hz coil power	eu at ouriz	in-rush	VA	75
			in-rush holding	VA VA	75 9
	of 50/60Hz coil power	ed at 60Hz	noluling	٧٨	<u> </u>
	31 33/301 12 3011 POWEI	34 4t 501 1Z	in-rush	VA	70
			holding	VA	6.5
	of 60Hz coil powered	at 60Hz	9		
				١/٨	75
	·		in-rush	VA	75
	·		in-rush holding	VA VA	75 9
Dissipation at holding					
Dissipation at holding Max cycles frequency	≤20°C 50Hz			VA	9
Max cycles frequency Mechanical operation	≤20°C 50Hz		holding	VA	9 2.5
Max cycles frequency Mechanical operation Operating times	≤20°C 50Hz		holding	VA W	9 2.5
Max cycles frequency Mechanical operation Operating times	≤20°C 50Hz		holding	VA W	9 2.5
Max cycles frequency Mechanical operation Operating times	≤20°C 50Hz		holding	VA W	9 2.5
Max cycles frequency Mechanical operation Operating times	≤20°C 50Hz	Closing NO	holding	VA W cycles/h	9 2.5 3600
Max cycles frequency Mechanical operation Operating times	≤20°C 50Hz	Closing NO	holding	VA W cycles/h	9 2.5 3600
Max cycles frequency Mechanical operation Operating times	≤20°C 50Hz	-	holding	VA W cycles/h	9 2.5 3600
Max cycles frequency Mechanical operation Operating times	≤20°C 50Hz	Closing NO Opening NO	holding min max	VA W cycles/h ms ms	9 2.5 3600 8 24
Max cycles frequency Mechanical operation Operating times	≤20°C 50Hz	-	holding  min  max  min	VA W cycles/h ms ms	9 2.5 3600 8 24 10
Max cycles frequency Mechanical operation Operating times	≤20°C 50Hz	Opening NO	holding min max	VA W cycles/h ms ms	9 2.5 3600 8 24
Max cycles frequency Mechanical operation Operating times	≤20°C 50Hz	-	min max min max	VA W cycles/h ms ms ms	9 2.5 3600 8 24 10 20
Max cycles frequency Mechanical operation Operating times	≤20°C 50Hz	Opening NO	min max min max	VA W cycles/h ms ms ms ms	9 2.5 3600 8 24 10 20
Max cycles frequency Mechanical operation Operating times	≤20°C 50Hz	Opening NO	min max min max	VA W cycles/h ms ms ms	9 2.5 3600 8 24 10 20
Max cycles frequency Mechanical operation Operating times	≤20°C 50Hz	Opening NO Closing NC	min max min max	VA W cycles/h ms ms ms ms	9 2.5 3600 8 24 10 20
Max cycles frequency Mechanical operation Operating times Average time for Us o	≤20°C 50Hz	Opening NO Closing NC	min max min max min max	W cycles/h ms ms ms ms ms	9 2.5 3600 8 24 10 20 14 28
Max cycles frequency Mechanical operation Derating times Average time for Us o	≤20°C 50Hz	Opening NO  Closing NC  Opening NC	min max min max min max min max	W cycles/h ms ms ms ms ms ms	9 2.5 3600 8 24 10 20 14 28
Max cycles frequency Mechanical operation Derating times Average time for Us o	≤20°C 50Hz	Opening NO  Closing NC  Opening NC	min max min max min max min max	W cycles/h ms ms ms ms ms ms	9 2.5 3600 8 24 10 20 14 28 7 18
Max cycles frequency Mechanical operation Derating times Average time for Us o	≤20°C 50Hz	Opening NO  Closing NC  Opening NC	min max min max min max ax min max	VA W cycles/h ms ms ms ms ms ms ms	9 2.5 3600 8 24 10 20 14 28 7 18
Max cycles frequency Mechanical operation Operating times Average time for Us of	≥20°C 50Hz  control in AC  a) for three-phase AC mo	Opening NO  Closing NC  Opening NC	min max min max min max min max	W cycles/h ms ms ms ms ms ms	9 2.5 3600 8 24 10 20 14 28 7 18
Max cycles frequency Mechanical operation Operating times Average time for Us of	≥20°C 50Hz  control in AC  a) for three-phase AC mo erformance	Opening NO  Closing NC  Opening NC	min max min max min max ax min max	VA W cycles/h ms ms ms ms ms ms ms	9 2.5 3600 8 24 10 20 14 28 7 18
Max cycles frequency Mechanical operation Operating times Average time for Us of	≥20°C 50Hz  control in AC  a) for three-phase AC mo	Opening NO  Closing NC  Opening NC	min max min max min max at 480V at 600V	W cycles/h ms ms ms ms ms ms A A	9 2.5 3600 8 24 10 20 14 28 7 18
Max cycles frequency Mechanical operation Operating times Average time for Us of	≥20°C 50Hz  control in AC  a) for three-phase AC mo erformance	Opening NO  Closing NC  Opening NC	min max min max min max at 480V at 600V	W  cycles/h  ms ms ms ms ms ms A A  HP	9 2.5 3600 8 24 10 20 14 28 7 18
Max cycles frequency Mechanical operation Operating times Average time for Us o	sontrol in AC  a) for three-phase AC moerformance for single-phase AC m	Opening NO  Closing NC  Opening NC  otor	min max min max min max at 480V at 600V	W cycles/h ms ms ms ms ms ms A A	9 2.5 3600 8 24 10 20 14 28 7 18
Max cycles frequency Mechanical operation Derating times Everage time for Us of	≥20°C 50Hz  control in AC  a) for three-phase AC mo erformance	Opening NO  Closing NC  Opening NC  otor	min max min max min max at 480V at 600V	Ward of the control o	9 2.5 3600 8 24 10 20 14 28 7 18



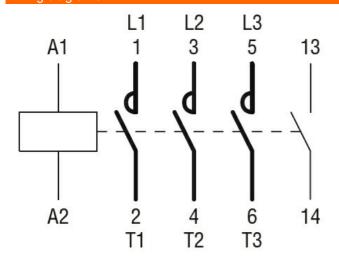
220/230V	HP	5
460/480V	HP	7.5

		220/200 V		O
		460/480V	HP	7.5
		575/600V	HP	10
General USE				
	Contactor			
		AC current	Α	28
	Auxiliary contacts			
	•	AC voltage	V	600
		AC current	Α	10
		DC voltage	V	250
		DC current	Α	1
Short-circuit protect	tion fuse, 600V			
,	High fault			
	3	Short circuit current	kA	100
		Fuse rating	Α	30
		Fuse class		J
	Standard fault			
		Short circuit current	kA	5
		Fuse rating	Α	70
Contact rating of au	uxiliary contacts according to UL	<u> </u>		A600 - P600
Ambient conditions				
Temperature				
•	Operating temperature			
	21 2 2 3 1 2 2 2	min	°C	-50
		max	°C	70
	Storage temperature			
	Grand and the second	min	°C	-60
		max	°C	80
Max altitude		ax	m	3000
Resistance & Prote	ection			
Pollution degree				3
Dimensions				
Billionolono				





## 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