



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			
	≤24V	Α	20
	48V	Α	20
	75V	Α	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	<u>-</u>
IEC max current le in DC3-DC5 with L/R ≤ 15ms with 2 poles in series	220 V		
The max current to in 600-600 with E/N = 10m3 with 2 poics in 3cmc3	≤24V	Α	15
	48V	A	13
	46 V 75 V		13
		A	
	110V	A	8
150	220V	Α	2
IEC max current le in DC3-DC5 with L/R ≤ 15ms with 3 poles in series	.= :		4.0
	≤24V	A	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			
	≤24V	Α	15
	48V	Α	15
	75V	Α	15
	110V	Α	16
	220V	Α	7
Short-time allowable current for 10s (IEC/EN60947-1)		Α	150
Protection fuse			
	gG (IEC)	Α	32
	aM (IEC)	Α	12
Making capacity (RMS value)		Α	120
Breaking capacity at voltage			
	440V	Α	96
	500V	A	96
	690V	A	94
Resistance per note (average value)	090 v	mΩ	2.5
Resistance per pole (average value)		11177	۷.۵
Power dissipation per pole (average value)	141	107	0
	Ith	W	2
Till to die teen et te teen de	AC3	W	0.4
Tightening torque for terminals			4 =
	min	Nm	1.5
	max	Nm	1.8
	min	lbin	1.1
	max	Ibin	1.5
Tightening torque for coil terminal			
	min	Nm	0.8
	max	Nm	1
	min	lbin	0.8



		max	Ibin	0.74
	simultaneously connectable		Nr.	2
Conductor section	A.M.O. #4			
	AWG/Kcmil			40
	Clavible w/o live an diretor anation	max		10
	Flexible w/o lug conductor section	min	mm²	1
		min	mm² mm²	1 6
	Flexible c/w lug conductor section	max	111111	0
	r lexible 6/w lug corluction section	min	mm²	1
		max	mm²	4
	Flexible with insulated spade lug conductor section			•
	r loxilote mar inculated opade lag contactor cooler	min	mm²	1
		max	mm²	4
D	(''			IP20 when
Power terminal protect	tion according to IEC/EN 60529			properly wired
Mechanical features				
Operating position				
		normal		Vertical plan
		allowable		±30°
Fixing				Screw / DIN rail
				35mm
Weight			g	360
Conductor section				
	AWG/kcmil conductor section			
A 10		max		10
IALIVIIIary contact chara	ACTAPISTICS			
Auxiliary contact chara	20101101100		۸	10
Thermal current Ith			Α	10 4600 B600
Thermal current Ith IEC/EN 60947-5-1 de	signation		Α	10 A600 - P600
·	signation	2301/		A600 - P600
Thermal current Ith IEC/EN 60947-5-1 de	signation	230V 400V	A	A600 - P600 3
Thermal current Ith IEC/EN 60947-5-1 de	signation	400V	A A	A600 - P600 3 1.9
Thermal current lth IEC/EN 60947-5-1 de Operating current AC1	signation 15		A	A600 - P600 3
Thermal current Ith IEC/EN 60947-5-1 de Operating current AC1	signation 15	400V 500V	A A A	3 1.9 1.4
Thermal current lth IEC/EN 60947-5-1 de Operating current AC1 Operating current DC1	signation 15	400V	A A	A600 - P600 3 1.9
Thermal current lth IEC/EN 60947-5-1 de Operating current AC1 Operating current DC1	signation 15	400V 500V 110V	A A A	3 1.9 1.4 5.7
Thermal current lth IEC/EN 60947-5-1 de Operating current AC1 Operating current DC1	signation 15	400V 500V	A A A	3 1.9 1.4
Thermal current lth IEC/EN 60947-5-1 de Operating current AC1 Operating current DC1	signation 15	400V 500V 110V 24V	A A A	A600 - P600 3 1.9 1.4 5.7
Thermal current lth IEC/EN 60947-5-1 de Operating current AC1 Operating current DC1	signation 15	400V 500V 110V 24V 48V	A A A A	A600 - P600 3 1.9 1.4 5.7 5.7 2.9
Thermal current Ith IEC/EN 60947-5-1 de	signation 15	400V 500V 110V 24V 48V 60V	A A A A A	3 1.9 1.4 5.7 5.7 2.9 2.3
Thermal current lth IEC/EN 60947-5-1 de Operating current AC1 Operating current DC1	signation 15	400V 500V 110V 24V 48V 60V 110V 125V 220V	A A A A A	A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25
Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC Operating current DC	signation 15	400V 500V 110V 24V 48V 60V 110V 125V	A A A A A A	A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1
Thermal current Ith IEC/EN 60947-5-1 de Operating current AC1 Operating current DC2 Operating current DC3 Operating current DC3	signation 15	400V 500V 110V 24V 48V 60V 110V 125V 220V	A A A A A A A	A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2
Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC	signation 15	400V 500V 110V 24V 48V 60V 110V 125V 220V	A A A A A A A Cycles	A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2
Thermal current Ith IEC/EN 60947-5-1 de Operating current AC1 Operating current DC2 Operating current DC3 Operating current DC3 Operations Mechanical life Electrical life	signation 15	400V 500V 110V 24V 48V 60V 110V 125V 220V	A A A A A A A	A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2
Thermal current Ith IEC/EN 60947-5-1 de Operating current AC1 Operating current DC2 Operating current DC3 Operations Mechanical life Electrical life Safety related data	signation 15 12 13	400V 500V 110V 24V 48V 60V 110V 125V 220V	A A A A A A A Cycles	A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2
Thermal current Ith IEC/EN 60947-5-1 de Operating current AC1 Operating current DC2 Operating current DC3 Operations Mechanical life Electrical life Safety related data	signation 15	400V 500V 110V 24V 48V 60V 110V 125V 220V 600V	A A A A A A A A Cycles cycles	A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 20000000 20000000
Thermal current Ith IEC/EN 60947-5-1 de Operating current AC1 Operating current DC2 Operating current DC3 Operations Mechanical life Electrical life Safety related data	signation 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 A Cycles cycles	A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 20000000 20000000
Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC Operating current DC Operating current DC Operations Mechanical life Electrical life Safety related data Performance level B1	signation 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 A Cycles cycles	A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 20000000 20000000 20000000
Thermal current Ith IEC/EN 60947-5-1 de Operating current AC1 Operating current DC2 Operating current DC3 Operating current DC3 Operations Mechanical life Electrical life Safety related data Performance level B1 Mirror contats accordi	signation 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 A Cycles cycles	A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 20000000 20000000 20000000 yes
Thermal current Ith IEC/EN 60947-5-1 de Operating current AC Operating current DC Operating current DC Operating current DC Operations Mechanical life Electrical life Safety related data Performance level B1	signation 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 A Cycles cycles	A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 20000000 20000000 20000000



Rated AC voltage at 5	50/60Hz		V	24
AC operating voltage				
	of 50/60Hz coil powered at 50Hz			
	pick-up			
		min	%Us	80
		max	%Us	110
	drop-out	min	0/110	20
		min max	%Us %Us	20 55
	of 50/60Hz coil powered at 60Hz	Illax	/005	33
	pick-up			
	pion ap	min	%Us	85
		max	%Us	110
	drop-out			
	·	min	%Us	20
		max	%Us	55
AC average coil cons				
	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
	of COLLE and required at COLLE	holding	VA	6.5
	of 60Hz coil powered at 60Hz	in-rush	VA	75
		holding	VA VA	9
Dissipation at holding	<20°C 50Hz	Holding	W	2.5
Max cycles frequency			VV	2.0
Mechanical operation			cycles/h	3600
Mechanical operation Operating times			cycles/h	3600
Operating times Average time for Us of	control		cycles/h	3600
Operating times	control in AC		cycles/h	3600
Operating times			cycles/h	
Operating times	in AC) min	cycles/h	8
Operating times	in AC Closing NC	min max		
Operating times	in AC	min max O	ms ms	8 24
Operating times	in AC Closing NC	min max O min	ms ms	8 24 10
Operating times	in AC Closing NC Opening N	min max O min max	ms ms	8 24
Operating times	in AC Closing NC	min max O min max	ms ms ms	8 24 10 20
Operating times	in AC Closing NC Opening N	min max O min max min	ms ms ms ms	8 24 10 20
Operating times	in AC Closing NC Opening NC Closing NC	min max O min max min max	ms ms ms	8 24 10 20
Operating times	in AC Closing NC Opening N	min max O min max min max	ms ms ms ms	8 24 10 20
Operating times	in AC Closing NC Opening NC Closing NC	min max O min max min max min max	ms ms ms ms	8 24 10 20 14 28
Operating times	in AC Closing NC Opening NC Closing NC	min max O min max min max C min	ms ms ms ms	8 24 10 20 14 28
Operating times Average time for Us of	in AC Closing NC Opening NC Closing NC	min max O min max min max C min	ms ms ms ms	8 24 10 20 14 28
Operating times Average time for Us of	in AC Closing NC Opening NC Closing NC Opening N	min max O min max min max C min	ms ms ms ms	8 24 10 20 14 28
Operating times Average time for Us of the control	in AC Closing NC Opening NC Closing NC Opening N Opening N of three-phase AC motor	min max O min max min max C min max C min max	ms ms ms ms ms	8 24 10 20 14 28 7 18
Operating times Average time for Us of	in AC Closing NC Opening NC Closing NC Opening NC Opening N of three-phase AC motor erformance	min max min max min max min max min max at 480V	ms ms ms ms ms ms	8 24 10 20 14 28 7 18
Operating times Average time for Us of the control	in AC Closing NC Opening NC Closing NC Opening N Opening N of three-phase AC motor	min max min max min max min max min max at 480V at 600V	ms ms ms ms ms ms	8 24 10 20 14 28 7 18
Operating times Average time for Us of the control	in AC Closing NC Opening NC Closing NC Opening NC Opening N of three-phase AC motor erformance	min max min max min max min max min max at 480V at 600V	ms ms ms ms ms ms	8 24 10 20 14 28 7 18
Operating times Average time for Us of the control	in AC Closing NC Opening NC Closing NC Opening NC	min max min max min max min max min max at 480V at 600V	ms ms ms ms ms ms	8 24 10 20 14 28 7 18
Operating times Average time for Us of the control	in AC Closing NC Opening NC Closing NC Opening NC Opening N of three-phase AC motor erformance	min max min max min max min max min max min max at 480V at 600V	ms ms ms ms ms ms HP	8 24 10 20 14 28 7 18
Operating times Average time for Us of the control	in AC Closing NC Opening NC Closing NC Opening NC	min max min max min max min max min max at 480V at 600V	ms ms ms ms ms ms	8 24 10 20 14 28 7 18

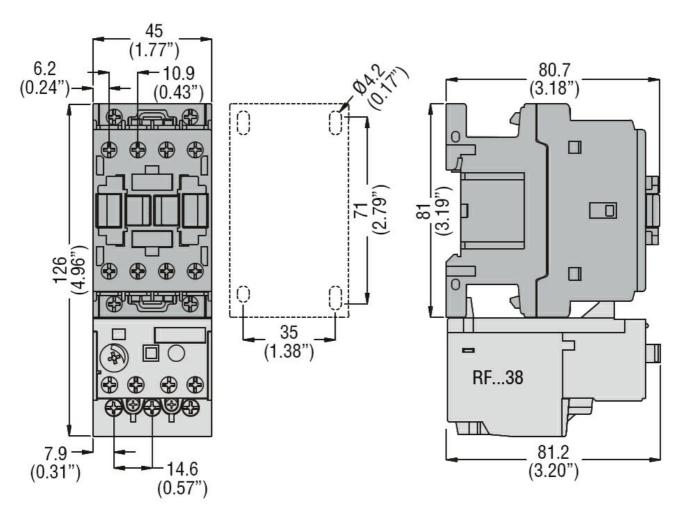




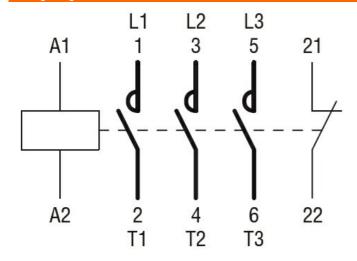
		220/230V	HP	5
		460/480V	HP	7.5
		575/600V	HP	10
General USE				
	Contactor			
		AC current	Α	28
	Auxiliary contacts			
	•	AC voltage	V	600
		AC current	Α	10
		DC voltage	V	250
		DC current	Α	1
Short-circuit protecti	on fuse, 600V			
	High fault			
		Short circuit current	kA	100
		Fuse rating	Α	30
		Fuse class		J
	Standard fault			
		Short circuit current	kA	5
		Fuse rating	Α	70
Contact rating of aux	ciliary 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 & Protect	etion			
Pollution degree				3
Dimensions				

ENERGY AND AUTOMATION

THREE-POLE CONTACTOR, IEC OPERATING CURRENT IE (AC3) = 12A, AC COIL 50/60HZ, 24VAC, 1NC AUXILIARY CONTACT



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



BF1201A024

THREE-POLE CONTACTOR, IEC OPERATING CURRENT IE (AC3) = 12A, AC COIL 50/60HZ, 24VAC, 1NC AUXILIARY CONTACT

CCC			
cULus			
EAC			

ETIM classification

ETIM 8.0

EC000066 -Power contactor, AC switching





No. 3 No. 3 No. 3 No. 3 No. 3 No. 4 No. 5 No.	Product designation Product type designation			Power contactor BF12
Rated insulation voltage Ui IEC/EN V 690 Rated impulse withstand voltage Uimp kV 6 Operational frequency min Hz 25 IEC Conventional free air thermal current Ith A 28 Operational current Ie AC-1 (≤40°C) A 28 AC-1 (≤55°C) A 23 AC-1 (≤55°C) A 20 AC-3 (≤440V ≤55°C) A 20 AC-3 (≤440V ≤55°C) A 7.9 Rated operational power AC-3 (T≤55°C) 230V kW 3.2 400V kW 5.7 415V kW 5.5 500V kW 5.5 500V kW 5.5 Rated operational power AC-1 (T≤40°C) 230V kW 5 500V kW 5.5 Rated operational power AC-1 (T≤40°C) 230V kW 18 500V kW 23 IEC max current le in DC1 with L/R ≤ 1ms with 1 poles in series ≤24V A 17 48V A 15 75V A 13 10V A <t< td=""><td></td><td></td><td></td><td></td></t<>				
Rated impulse withstand voltage Uimp	Number of poles		Nr.	3
Deprational frequency	Rated insulation voltage Ui IEC/EN		V	690
Fig. 25	Rated impulse withstand voltage Uimp		kV	6
EC Conventional free air thermal current Ith	Operational frequency			
EC Conventional free air thermal current Ith Operational current Ie A		min	Hz	25
Operational current le 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 5.7 415V kW 5.7 415V kW 5.5 500V kW 5.5 500V kW 5.5 690V kW 5. Rated operational power AC-1 (T≤40°C) 230V kW 10 40V kW 23 690V kW 32 IEC max current le in DC1 with L/R ≤ 1ms with 1 poles in series ≤24V A 15 75V A 13 110V A 6 220V A 1 EC max current le 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 le in DC1 with L/R ≤ 1ms with 3 poles in series ≤24V A 20 48V A 20 75V A 20		max	Hz	400
AC-1 (≤40°C)	IEC Conventional free air thermal current Ith		Α	28
AC-1 (S55°C)	Operational current le			
AC-1 (≤70°C)		AC-1 (≤40°C)	Α	28
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 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 A 17 48V A 15 75V A 13 110V A 6 220V A − IEC max current le in DC1 with L/R ≤ 1ms with 2 poles in series ≤24V A 20 48V A 20 75V A 18 110V A 13 110V A 13 120V A 13 110V A 14 110V A 15 110V		AC-1 (≤55°C)	Α	23
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 3.2 5		AC-1 (≤70°C)	Α	20
Rated operational power AC-3 (T≤55°C) 230V kW 3.2 400V kW 5.7 415V kW 6.2 4440V kW 5.5 500V kW 5 690V kW 5 690V kW 5 690V kW 10 400V kW 18 500V kW 23 690V kW 23 690V kW 32 IEC max current le in DC1 with L/R ≤ 1ms with 1 poles in series \$\frac{\frac{24V}{48V}}{4} \frac{A}{15}\$ \$\frac{75V}{A} \frac{1}{8}\$ \$\frac{24V}{4} \frac{A}{20}\$ \$\frac{22V}{4} \frac{A}{18}\$ \$\frac{1}{110V} \frac{A}{13}\$ \$\frac{1}{220V} \frac{A}{13}\$		AC-3 (≤440V ≤55°C)	Α	12
230V kW 3.2 400V kW 5.7 415V kW 6.2 446V kW 5.5 500V kW 5.5 500V kW 5 500V kW 10 400V kW 18 500V kW 23 690V kW 32 500V		AC-4 (400V)	Α	7.9
400V kW 5.7 415V kW 6.2 440V kW 5.5 500V kW 5 500V kW 5 5 500V kW 5 5 500V kW 5 5 500V kW 5 5 5 500V kW 5 5 5 5 5 5 5 5 5	Rated operational power AC-3 (T≤55°C)			
A15V		230V	kW	3.2
A40V kW 5.5 500V kW 5 690V kW 10 400V kW 18 500V kW 23 690V kW 32 690V kW		400V	kW	5.7
Soov kW 5 690V kW 5		415V	kW	6.2
Rated operational power AC-1 (T≤40°C) 230V kW 10 400V kW 18 500V kW 23 690V kW 32 32 32 33 33 33 33		440V	kW	5.5
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 A 17 48V A 15 75V A 13 110V A 6 220V A - IEC max current le 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 le in DC1 with L/R ≤ 1ms with 3 poles in series ≤24V A 20 48V A 20 75V A 18 110V A 13 220V A 1		500V	kW	5
		690V	kW	5
A00V kW 18 500V kW 23 690V kW 32	Rated operational power AC-1 (T≤40°C)			
Soov kW 23 690V kW 32		230V	kW	10
EC max current le in DC1 with L/R ≤ 1ms with 1 poles in series				
Section Sec				
		690V	kW	32
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	IEC max current le in DC1 with L/R ≤ 1ms with 1 poles in series			
T5V A 13 110V A 6 220V A -			Α	
110V A 6 220V A -			Α	
EC max current le in DC1 with L/R \leq 1ms with 2 poles in series \leq 24V A 20 48V A 20 75V A 18 110V A 13 220V A 1				
EC max current le in DC1 with L/R ≤ 1ms with 2 poles in series ≤24V				6
		220V	Α	_
	IEC max current le in DC1 with L/R ≤ 1ms with 2 poles in series			
IEC max current le in DC1 with L/R \leq 1ms with 3 poles in series $ \leq 24V \qquad A \qquad 22 \\ 48V \qquad A \qquad 22 \\ 75V \qquad A \qquad 20 $				
≤24V A 22 48V A 22 75V A 20	150 H. P.O.A. W. L. P. C. A. W. C. A. C.	220V	A	1
48V A 22 75V A 20	IEC max current le in DC1 with L/R ≤ 1ms with 3 poles in series		_	
75V A 20				
110V A 16				
		110V	Α	16



	220V	Α	11
IEC max current le in DC1 with L/R ≤ 1ms with 4 poles in series			
	≤24V	Α	20
	48V	Α	20
	75V	Α	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			
120 max sarronx to in 200 200 mar 27x = 10mb max 2 police in collect	≤24V	Α	15
	48V	Α	13
	75V	A	12
	110V	A	8
	220V	A	2
IEC max current le in DC3-DC5 with L/R ≤ 15ms with 3 poles in series	2201	^	
TEC may content to in DC3-DC3 with E/K > 13ms with 3 poles in series	-24 17	۸	10
	≤24V 48V	A	18
		A	18
	75V	A	15
	110V	A	12
	220V	Α	6
IEC max current le in DC3-DC5 with L/R ≤ 15ms with 4 poles in series		_	
	≤24V	Α	15
	48V	Α	15
	75V	Α	15
	110V	Α	16
	220V	Α	7
Short-time allowable current for 10s (IEC/EN60947-1)		Α	150
Protection fuse			
	gG (IEC)	Α	32
	aM (IEC)	Α	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)			
\	lth	W	2
	AC3	W	0.4
Tightening torque for terminals	7.00	••	U. .
	min	Nm	1.5
	max	Nm	1.8
	min	Ibin	1.1
		Ibin	1.5
Tightening torque for coil terminal	max	ווטו	1.0
rightening torque for contential		Nima	0.0
	min	Nm Næ	0.8
	max	Nm	1
	min	lbin	0.8



Name of the same	a in the group of the la	max	Ibin	0.74
	simultaneously connectable		Nr.	2
Conductor section	AVA/C/I/cmil			
	AWG/Kcmil	may		10
	Flexible w/o lug conductor section	max		10
	r lexible w/o lug corludctor section	min	mm²	1
		max	mm²	6
	Flexible c/w lug conductor section	max		
	Tiomble of Wing conductor coolien	min	mm²	1
		max	mm²	4
	Flexible with insulated spade lug conductor section			
	5 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	min	mm²	1
		max	mm²	4
Dower terminal protec	ation according to IEC/EN COECO			IP20 when
Power terminal protec	ction according to IEC/EN 60529			properly wired
Mechanical features				
Operating position				
		normal		Vertical plan
		allowable		±30°
Fixing				Screw / DIN rail
				35mm
Weight			g	364
Conductor section	ANAO (1			
	AWG/kcmil conductor section			4.0
A miliam constant about	a eta viation	max		10
Auxiliary contact chara Thermal current Ith	acteristics		А	10
IEC/EN 60947-5-1 de	ocianation		A	A600 - P600
Operating current AC				A000 - F 000
Operating current AO	10	230V	Α	3
		230 V		
		400V	Α.	19
		400V 500V	A A	1.9 1.4
Operating current DC	12	400V 500V	A	1.4
Operating current DC	12	500V	Α	1.4
			_	
		500V 110V	Α	5.7
		500V	A A	1.45.75.7
		500V 110V 24V	A A	5.7
		500V 110V 24V 48V	A A A	1.4 5.7 5.7 2.9
		500V 110V 24V 48V 60V	A A A A	5.7 5.7 2.9 2.3
Operating current DC Operating current DC		500V 110V 24V 48V 60V 110V	A A A A A	5.7 5.7 2.9 2.3 1.25
		500V 110V 24V 48V 60V 110V 125V	A A A A A	5.7 5.7 2.9 2.3 1.25 1.1
Operating current DC		500V 110V 24V 48V 60V 110V 125V 220V	A A A A A A	1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2
Operating current DC Operations Mechanical life		500V 110V 24V 48V 60V 110V 125V 220V	A A A A A A	1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2
Operating current DC Operations Mechanical life Electrical life		500V 110V 24V 48V 60V 110V 125V 220V	A A A A A A A	1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2
Operating current DC Operations Mechanical life Electrical life Safety related data	13	500V 110V 24V 48V 60V 110V 125V 220V	A A A A A A A Cycles	1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2
Operating current DC Operations Mechanical life Electrical life Safety related data		500V 110V 24V 48V 60V 110V 125V 220V 600V	A A A A A A A Cycles cycles	1.4 5.7 2.9 2.3 1.25 1.1 0.55 0.2 20000000 20000000
Operating current DC Operations Mechanical life Electrical life Safety related data	Od according to EN/ISO 13489-1	110V 24V 48V 60V 110V 125V 220V 600V	A A A A A A Cycles cycles	1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 20000000 20000000
Operating current DC Operations Mechanical life Electrical life Safety related data Performance level B1	0d according to EN/ISO 13489-1	500V 110V 24V 48V 60V 110V 125V 220V 600V	A A A A A A A Cycles cycles	1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 20000000 20000000 20000000 200000000
Operating current DC Operations Mechanical life Electrical life Safety related data Performance level B1 Mirror contats accord	Od according to EN/ISO 13489-1	110V 24V 48V 60V 110V 125V 220V 600V	A A A A A A Cycles cycles	1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 20000000 20000000
Operating current DC Operations Mechanical life Electrical life Safety related data Performance level B1	0d according to EN/ISO 13489-1	110V 24V 48V 60V 110V 125V 220V 600V	A A A A A A Cycles cycles	1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 20000000 20000000 20000000 200000000



Rated AC voltage at 5	50/60Hz		V	48
AC operating voltage			<u> </u>	
	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		0/11	
		min	%Us	85
	مريم مريد	max	%Us	110
	drop-out	min	0/110	20
		min	%Us %Us	55
AC average coil cons	umption at 20°C	max	/008	33
AU average con cons	of 50/60Hz coil powered at 50Hz			
	of 30/00112 coil powered at 30Hz	in-rush	VA	75
		holding	VA	9
	of 50/60Hz coil powered at 60Hz		V/ (
	01 00700112 0011 poworod at 00112	in-rush	VA	70
		holding	VA	6.5
	of 60Hz coil powered at 60Hz	3		
	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	in-rush	VA	75
		holding	VA	9
Dissipation at holding	≤20°C 50Hz		W	2.5
Max cycles frequency				
Mechanical operation			cycles/h	3600
Mechanical operation Operating times			cycles/h	3600
Mechanical operation	ontrol		cycles/h	3600
Mechanical operation Operating times	ontrol in AC		cycles/h	3600
Mechanical operation Operating times	ontrol			
Mechanical operation Operating times	ontrol in AC	min	ms	8
Mechanical operation Operating times	ontrol in AC Closing	min max		
Mechanical operation Operating times	ontrol in AC	min max NO	ms ms	8 24
Mechanical operation Operating times	ontrol in AC Closing	min max NO min	ms ms ms	8 24 10
Mechanical operation Operating times	ontrol in AC Closing I Opening	min max NO min max	ms ms	8 24
Mechanical operation Operating times	ontrol in AC Closing	min max NO min max	ms ms ms	8 24 10 20
Mechanical operation Operating times	ontrol in AC Closing I Opening	min max NO min max NC	ms ms ms ms	8 24 10 20
Mechanical operation Operating times	ontrol in AC Closing Opening Closing	min max NO min max NC min max	ms ms ms	8 24 10 20
Mechanical operation Operating times	ontrol in AC Closing I Opening	min max NO min max NC min max	ms ms ms ms	8 24 10 20
Mechanical operation Operating times	ontrol in AC Closing Opening Closing	Min max NO min max NC min max NC	ms ms ms ms	8 24 10 20 14 28
Mechanical operation Operating times	ontrol in AC Closing Opening Closing	min max NO min max NC min max NC min max max	ms ms ms ms ms	8 24 10 20 14 28
Mechanical operation Operating times Average time for Us of	ontrol in AC Closing Opening Closing	min max NO min max NC min max NC min max max	ms ms ms ms ms	8 24 10 20 14 28
Mechanical operation Operating times Average time for Us of the control of the co	ontrol in AC Closing Opening Closing	min max NO min max NC min max NC min max max	ms ms ms ms ms	8 24 10 20 14 28
Mechanical operation Operating times Average time for Us of the second o	ontrol in AC Closing Opening Closing Opening Opening	min max NO min max NC min max NC min max NC min max	ms ms ms ms ms	8 24 10 20 14 28 7 18
Mechanical operation Operating times Average time for Us of	ontrol in AC Closing Opening Closing Opening Opening	Min max NO min max NC min max NC min max NC at 480V	ms ms ms ms ms	8 24 10 20 14 28 7 18
Mechanical operation Operating times Average time for Us of the second o	ontrol in AC Closing Opening Closing Opening Opening	Min max NO min max NC min max NC min max NC at 480V	ms ms ms ms ms	8 24 10 20 14 28 7 18
Mechanical operation Operating times Average time for Us of the second o	ontrol in AC Closing Opening Closing Opening Opening Opening	NO min max NC min max NC min max NC min max NC at 480V at 600V	ms ms ms ms ms ms	8 24 10 20 14 28 7 18
Mechanical operation Operating times Average time for Us of the second o	ontrol in AC Closing Opening Closing Closing Opening Opening of three-phase AC motor erformance for single-phase AC motor	Min max NO min max NC min max NC Min max NC Min max MC Min max MC Min max Max Max Max Max Max Max Max	ms ms ms ms ms ms	8 24 10 20 14 28 7 18
Mechanical operation Operating times Average time for Us of the second o	ontrol in AC Closing Opening Closing Opening Opening Opening	min max NO min max NC min max NC min max NC at 480V at 600V 230V	ms ms ms ms ms ms hs	8 24 10 20 14 28 7 18
Mechanical operation Operating times Average time for Us of the control of the co	ontrol in AC Closing Opening Closing Closing Opening Opening of three-phase AC motor erformance for single-phase AC motor	NO min max NC min max NC min max NC min max NC at 480V at 600V	ms ms ms ms ms ms	8 24 10 20 14 28 7 18

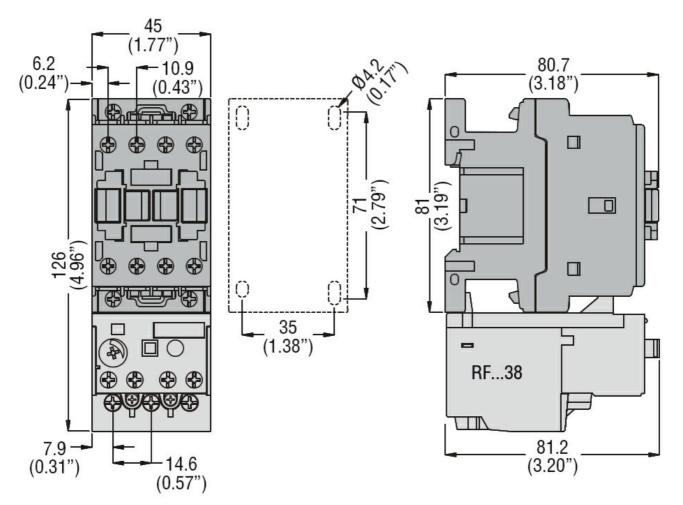




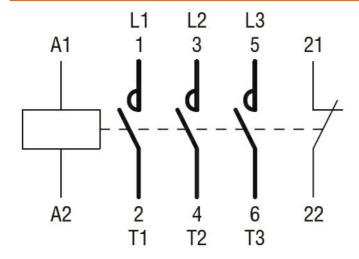
		220/230V	HP	5
		460/480V	HP	7.5
		575/600V	HP	10
General USE				
	Contactor			
		AC current	Α	28
	Auxiliary contacts			
	•	AC voltage	V	600
		AC current	Α	10
		DC voltage	V	250
		DC current	Α	1
Short-circuit protecti	on fuse, 600V			
	High fault			
		Short circuit current	kA	100
		Fuse rating	Α	30
		Fuse class		J
	Standard fault			
		Short circuit current	kA	5
		Fuse rating	Α	70
Contact rating of aux	ciliary 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 & Protect	etion			
Pollution degree				3
Dimensions				

ENERGY AND AUTOMATION

THREE-POLE CONTACTOR, IEC OPERATING CURRENT IE (AC3) = 12A, AC COIL 50/60HZ, 48VAC, 1NC AUXILIARY CONTACT



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

BF1201A048



BF1201A048

THREE-POLE CONTACTOR, IEC OPERATING CURRENT IE (AC3) = 12A, AC COIL 50/60HZ, 48VAC, 1NC AUXILIARY CONTACT

CCC			
cULus			
EAC			

ETIM classification

ETIM 8.0

EC000066 -Power contactor, AC switching







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	-0.43.4		
	≤24V	A	17
	48V	A	15
	75V	A	13
	110V	A	6
IEC max current le in DC1 with L/R ≤ 1ms with 2 poles in series	220V	Α	_
TEC max current le in DCT with L/R \(\) This with 2 poles in series	<0417	۸	20
	≤24V 48V	A	20
	48 V 75 V	A A	20
	75V 110V	A	18 13
	220V	A	1
IEC max current le in DC1 with L/R ≤ 1ms with 3 poles in series	2200	Α	1
TEO MAX GUITER RE IN DOT WITH E/K > THIS WITH 3 POICS IN SCHES	≤24V	٨	22
	≤24V 48V	A A	22
	48 V 75 V	A	20
	110V	A	16
	1100	^	10





	220V	Α	11
IEC max current le in DC1 with L/R ≤ 1ms with 4 poles in series			
	≤24V	Α	20
	48V	Α	20
	75V	Α	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			
120 max sarronx to in 200 200 mar 27x = 10mb max 2 police in collect	≤24V	Α	15
	48V	Α	13
	75V	A	12
	110V	A	8
	220V	A	2
IEC max current le in DC3-DC5 with L/R ≤ 15ms with 3 poles in series	2201	^	
TEC may content to in DC3-DC3 with E/K > 13ms with 3 poles in series	-24 17	۸	10
	≤24V 48V	A	18
		A	18
	75V	A	15
	110V	A	12
	220V	Α	6
IEC max current le in DC3-DC5 with L/R ≤ 15ms with 4 poles in series		_	
	≤24V	Α	15
	48V	Α	15
	75V	Α	15
	110V	Α	16
	220V	Α	7
Short-time allowable current for 10s (IEC/EN60947-1)		Α	150
Protection fuse			
	gG (IEC)	Α	32
	aM (IEC)	Α	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)			
\	lth	W	2
	AC3	W	0.4
Tightening torque for terminals	7.00	••	U. .
	min	Nm	1.5
	max	Nm	1.8
	min	Ibin	1.1
		Ibin	1.5
Tightening torque for coil terminal	max	ווטו	1.0
rightening torque for contential		Nima	0.0
	min	Nm Nas	0.8
	max	Nm	1
	min	lbin	0.8



		max	Ibin	0.74
	simultaneously connectable		Nr.	2
Conductor section	1110/14			
	AWG/Kcmil			4.0
	Clavible w/o live an diretor postion	max		10
	Flexible w/o lug conductor section	min	mama ²	1
		min	mm² mm²	1 6
	Flexible c/w lug conductor section	max	111111	0
	r lexible 6/w lug corluction section	min	mm²	1
		max	mm²	4
	Flexible with insulated spade lug conductor section			•
	r loxible mar inediated opade lag confederer cooler	min	mm²	1
		max	mm²	4
D (('			IP20 when
Power terminal protect	tion according to IEC/EN 60529			properly wired
Mechanical features				
Operating position				
		normal		Vertical plan
		allowable		±30°
Fixing				Screw / DIN rail
				35mm
Weight			g	358
Conductor section				
	AWG/kcmil conductor section			
A 10	and the second s	max		10
Auxiliary contact chara Thermal current Ith	acteristics		A	10
	aignation		A	10 A600 B600
IEC/EN 60947-5-1 de	•		A	A600 - P600
IEC/EN 60947-5-1 de	•	2201/		A600 - P600
IEC/EN 60947-5-1 de	•	230V	A	A600 - P600 3
IEC/EN 60947-5-1 de	•	400V	A A	A600 - P600 3 1.9
IEC/EN 60947-5-1 de Operating current AC	15		A	A600 - P600 3
IEC/EN 60947-5-1 de Operating current AC	15	400V 500V	A A A	3 1.9 1.4
IEC/EN 60947-5-1 de Operating current AC Operating current DC	12	400V	A A	A600 - P600 3 1.9
IEC/EN 60947-5-1 de Operating current AC Operating current DC	12	400V 500V 110V	A A A	3 1.9 1.4 5.7
IEC/EN 60947-5-1 de Operating current AC Operating current DC	12	400V 500V 110V 24V	A A A	3 1.9 1.4 5.7
IEC/EN 60947-5-1 de Operating current AC Operating current DC	12	400V 500V 110V	A A A	3 1.9 1.4 5.7
IEC/EN 60947-5-1 de Operating current AC Operating current DC	12	400V 500V 110V 24V 48V	A A A A	3 1.9 1.4 5.7 5.7
IEC/EN 60947-5-1 de Operating current AC Operating current DC	12	400V 500V 110V 24V 48V 60V	A A A A A	3 1.9 1.4 5.7 5.7 2.9 2.3
IEC/EN 60947-5-1 de Operating current AC Operating current DC	12	400V 500V 110V 24V 48V 60V 110V	A A A A A	A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25
IEC/EN 60947-5-1 de Operating current AC Operating current DC	12	400V 500V 110V 24V 48V 60V 110V 125V	A A A A A A	A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1
IEC/EN 60947-5-1 de Operating current AC Operating current DC Operating current DC Operating current DC	12	400V 500V 110V 24V 48V 60V 110V 125V 220V	A A A A A A A	A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2
Operating current DC Mechanical life	12	400V 500V 110V 24V 48V 60V 110V 125V 220V	A A A A A A A A	A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2
Operating current DC Electrical life	12	400V 500V 110V 24V 48V 60V 110V 125V 220V	A A A A A A A	A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2
Operating current DC Operating current DC Operating current DC Operating current DC 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	A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2
Operating current DC Operating current DC Operating current DC Operating current DC Operations Mechanical life Electrical life Safety related data	12	400V 500V 110V 24V 48V 60V 110V 125V 220V 600V	A A A A A A A A Cycles cycles	A600 - P600 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 DC Operating current DC Operating current DC Operating current DC 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 A Cycles cycles	A600 - P600 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 DC Operating current DC Operating current DC Operating current DC Operations Mechanical life Electrical life Safety related data Performance level B1	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 A Cycles cycles	A600 - P600 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 DC Operating current DC Operating current DC Operating current DC Operations Mechanical life Electrical life Safety related data Performance level B1 Mirror contats accordi	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 A Cycles cycles	A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 20000000 20000000 20000000 yes
Operating current DC Operating current DC Operating current DC Operating current DC Operations Mechanical life Electrical life Safety related data Performance level B1	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 A Cycles cycles	A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 20000000 20000000 20000000



Rated AC voltage at 5	50/60Hz		V	110
AC operating voltage				
	of 50/60Hz coil powered at 50Hz			
	pick-up			
		min	%Us	80
	I	max	%Us	110
	drop-out	min	0/116	20
		min max	%Us %Us	20 55
	of 50/60Hz coil powered at 60Hz	Παλ	/003	
	pick-up			
	F15.1. 0F	min	%Us	85
		max	%Us	110
	drop-out			
		min	%Us	20
		max	%Us	55
AC average coil cons	•			
	of 50/60Hz coil powered at 50Hz		\	75
		in-rush	VA	75
	of 50/60Hz coil powered at 60Hz	holding	VA	9
	of 50/60Hz coil powered at 60Hz	in-rush	VA	70
		holding	VA	6.5
	of 60Hz coil powered at 60Hz	9		-
		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			cycles/h	3600
	ontrol		cycles/h	3600
Operating times	ontrol in AC		cycles/h	3600
Operating times	ontrol	min		
Operating times	ontrol in AC	min max	ms	8
Operating times	ontrol in AC Closing NO	min max		
Operating times	ontrol in AC		ms	8
Operating times	ontrol in AC Closing NO	max	ms ms	8 24
Operating times	ontrol in AC Closing NO	max min	ms ms ms	8 24 10 20
Operating times	ontrol in AC Closing NO Opening NO	max min	ms ms ms	8 24 10 20
Operating times	ontrol in AC Closing NO Opening NO Closing NC	max min max	ms ms ms	8 24 10 20
Operating times	ontrol in AC Closing NO Opening NO	max min max min max	ms ms ms ms	8 24 10 20 14 28
Operating times	ontrol in AC Closing NO Opening NO Closing NC	max min max min max min max	ms ms ms ms ms	8 24 10 20 14 28
Operating times Average time for Us of	ontrol in AC Closing NO Opening NO Closing NC	max min max min max	ms ms ms ms	8 24 10 20 14 28
Operating times Average time for Us of	ontrol in AC Closing NO Opening NO Closing NC Opening NC	max min max min max min max	ms ms ms ms ms	8 24 10 20 14 28
Operating times Average time for Us of	ontrol in AC Closing NO Opening NO Closing NC	max min max min max min max min max	ms ms ms ms ms	8 24 10 20 14 28 7 18
Operating times Average time for Us of	ontrol in AC Closing NO Opening NO Closing NC Opening NC	max min max min max min max	ms ms ms ms ms	8 24 10 20 14 28
Operating times Average time for Us of	ontrol in AC Closing NO Opening NO Closing NC Opening NC Opening NC	max min max min max min max at 480V	ms ms ms ms ms	8 24 10 20 14 28 7 18
Operating times Average time for Us of the control	ontrol in AC Closing NO Opening NO Closing NC Opening NC Opening NC	max min max min max min max at 480V	ms ms ms ms ms	8 24 10 20 14 28 7 18
Operating times Average time for Us of the control	ontrol in AC Closing NO Opening NO Closing NC Opening NC Opening NC opening NC	min max min max min max min max at 480V at 600V	ms ms ms ms ms ms	8 24 10 20 14 28 7 18
Operating times Average time for Us of the control	ontrol in AC Closing NO Opening NO Closing NC Opening NC	min max min max min max at 480V at 600V	ms ms ms ms ms ms	8 24 10 20 14 28 7 18
Operating times Average time for Us of the control	ontrol in AC Closing NO Opening NO Closing NC Opening NC Opening NC opening NC	max min max min max min max at 480V at 600V 110/120V 230V	ms ms ms ms ms ms hs	8 24 10 20 14 28 7 18
Operating times Average time for Us of the control	ontrol in AC Closing NO Opening NO Closing NC Opening NC	min max min max min max min max at 480V at 600V	ms ms ms ms ms ms	8 24 10 20 14 28 7 18

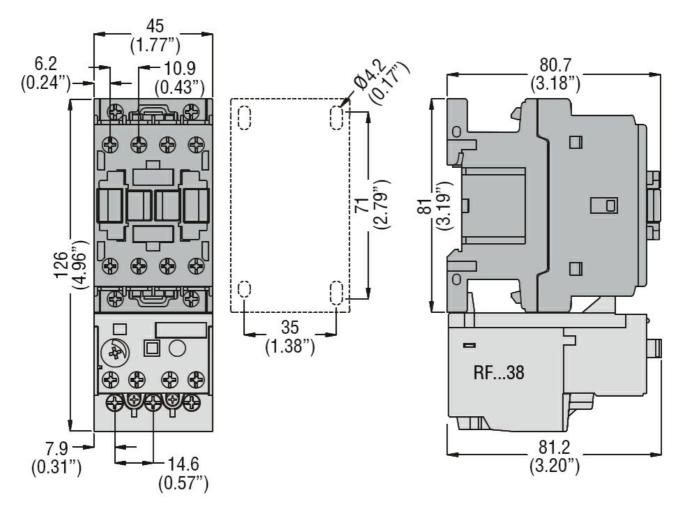




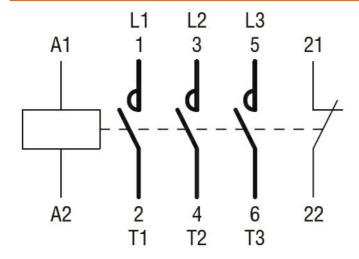
		220/230V	HP	5
		460/480V	HP	7.5
		575/600V	HP	10
General USE				
	Contactor			
		AC current	Α	28
	Auxiliary contacts			
	•	AC voltage	V	600
		AC current	Α	10
		DC voltage	V	250
		DC current	Α	1
Short-circuit protect	tion fuse, 600V			
	High fault			
		Short circuit current	kA	100
		Fuse rating	Α	30
		Fuse class		J
	Standard fault			
		Short circuit current	kA	5
		Fuse rating	Α	70
Contact rating of au	xiliary 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 & Prote	ction			
Pollution degree				3
Dimensions				
	·			

ENERGY AND AUTOMATION

THREE-POLE CONTACTOR, IEC OPERATING CURRENT IE (AC3) = 12A, AC COIL 50/60HZ, 110VAC, 1NC AUXILIARY CONTACT



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

BF1201A110



BF1201A110

THREE-POLE CONTACTOR, IEC OPERATING CURRENT IE (AC3) = 12A, AC COIL 50/60HZ, 110VAC, 1NC AUXILIARY CONTACT

CCC		
cULus		
EAC		

ETIM classification

ETIM 8.0

EC000066 -Power contactor, AC switching





Due do et designation			Davisa asatastas
Product designation			Power contactor
Product type designation Contact characteristics			BF12
		Nle	3
Number of poles		Nr. V	
Rated insulation voltage Ui IEC/EN			690
Rated impulse withstand voltage Uimp		kV	6
Operational frequency			0.5
	min	Hz	25
1500	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
			. •



BF1201A230

	220V	Α	11
IEC max current le in DC1 with L/R ≤ 1ms with 4 poles in series			
	≤24V	Α	20
	48V	Α	20
	75V	Α	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	<u>-</u>
IEC max current le in DC3-DC5 with L/R ≤ 15ms with 2 poles in series	220 V		
The max current to in 600-600 with E/N = 10m3 with 2 poics in 3cmc3	≤24V	Α	15
	48V	A	13
	46 V 75 V		13
		A	
	110V	A	8
150	220V	Α	2
IEC max current le in DC3-DC5 with L/R ≤ 15ms with 3 poles in series	.= :		4.0
	≤24V	A	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			
	≤24V	Α	15
	48V	Α	15
	75V	Α	15
	110V	Α	16
	220V	Α	7
Short-time allowable current for 10s (IEC/EN60947-1)		Α	150
Protection fuse			
	gG (IEC)	Α	32
	aM (IEC)	Α	12
Making capacity (RMS value)		Α	120
Breaking capacity at voltage			
	440V	Α	96
	500V	A	96
	690V	A	94
Resistance per note (average value)	090 v	mΩ	2.5
Resistance per pole (average value)		11177	۷.۵
Power dissipation per pole (average value)	141	107	0
	Ith	W	2
Till to die teen et te teen de	AC3	W	0.4
Tightening torque for terminals			4 =
	min	Nm	1.5
	max	Nm	1.8
	min	lbin	1.1
	max	Ibin	1.5
Tightening torque for coil terminal			
	min	Nm	0.8
	max	Nm	1
	min	lbin	0.8



		max	Ibin	0.74
	simultaneously connectable		Nr.	2
Conductor section	1140/14			
	AWG/Kcmil			4.0
	Florible wie has an director and the	max		10
	Flexible w/o lug conductor section			4
		min	mm² mm²	1 6
	Flexible c/w lug conductor section	max	ППП	· ·
	Flexible C/W lag corradctor section	min	mm²	1
		max	mm²	4
	Flexible with insulated spade lug conductor section		111111	-
	Tiexible with insulated spade lag conductor section	min	mm²	1
		max	mm²	4
		max		IP20 when
Power terminal prote	ction according to IEC/EN 60529			properly wired
Mechanical features				
Operating position				
		normal		Vertical plan
		allowable		±30°
Fiving				Screw / DIN rail
Fixing				35mm
Weight			g	354
Conductor section				
	AWG/kcmil conductor section			
		max		10
Auxiliary contact cha	racteristics			
Thermal current Ith			Α	10
	· ·		,,	A600 - P600
	· ·			A600 - P600
	· ·	230V	A	A600 - P600 3
	· ·	400V	A A	A600 - P600 3 1.9
Operating current AC	215		A	A600 - P600 3
Operating current AC	215	400V 500V	A A A	3 1.9 1.4
Operating current AC	C12	400V	A A	A600 - P600 3 1.9
Operating current AC	C12	400V 500V 110V	A A A	3 1.9 1.4 5.7
Operating current AC	C12	400V 500V 110V 24V	A A A	3 1.9 1.4 5.7
Operating current AC	C12	400V 500V 110V 24V 48V	A A A A	A600 - P600 3 1.9 1.4 5.7 5.7 2.9
Operating current AC	C12	400V 500V 110V 24V 48V 60V	A A A A A	3 1.9 1.4 5.7 5.7 2.9 2.3
Operating current AC	C12	400V 500V 110V 24V 48V 60V 110V	A A A A A	A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25
Operating current DC Operating current DC Operating current DC	C12	400V 500V 110V 24V 48V 60V 110V 125V	A A A A A A	A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1
Operating current AC	C12	400V 500V 110V 24V 48V 60V 110V 125V 220V	A A A A A A A A	A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55
Operating current AC Operating current DC Operating current DC	C12	400V 500V 110V 24V 48V 60V 110V 125V	A A A A A A	A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1
Operating current AC Operating current DC Operating current DC Operating current DC	C12	400V 500V 110V 24V 48V 60V 110V 125V 220V	A A A A A A A	A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2
Operating current AC Operating current DC Operating current DC Operating current DC Operations Mechanical life	C12	400V 500V 110V 24V 48V 60V 110V 125V 220V	A A A A A A A A Cycles	A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2
Operating current AC Operating current DC Operating current DC Operations Mechanical life Electrical life	C12	400V 500V 110V 24V 48V 60V 110V 125V 220V	A A A A A A A	A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2
Operating current AC Operating current DC Operating current DC Operating current DC Operations Mechanical life Electrical life Safety related data	212	400V 500V 110V 24V 48V 60V 110V 125V 220V	A A A A A A A A Cycles	A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2
Operating current AC Operating current DC Operating current DC Operating current DC Operations Mechanical life Electrical life Safety related data	C12	400V 500V 110V 24V 48V 60V 110V 125V 220V 600V	A A A A A A A A Cycles cycles	A600 - P600 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 AC Operating current DC Operating current DC Operations Mechanical life Electrical life Safety related data	212 213 10d 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	A600 - P600 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 AC Operating current DC Operating current DC Operations Mechanical life Electrical life Safety related data Performance level B	212 213 10d according to EN/ISO 13489-1	400V 500V 110V 24V 48V 60V 110V 125V 220V 600V	A A A A A A A A Cycles cycles	A600 - P600 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 AC Operating current DC Operating current DC Operations Mechanical life Electrical life Safety related data Performance level B	212 213 10d 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	A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 20000000 20000000



Rated AC voltage at 5	50/60Hz		V	230
AC operating voltage				
	of 50/60Hz coil powered at 50Hz			
	pick-up		0/11	0.0
		min	%Us	80
	drop-out	max	%Us	110
	αιορ-οαι	min	%Us	20
		max	%Us	55
	of 50/60Hz coil powered at 60Hz	max	7000	
	pick-up			
	1 - 1	min	%Us	85
		max	%Us	110
	drop-out			
		min	%Us	20
		max	%Us	55
AC average coil cons				
	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			7-5
		in-rush	VA	75
Dissipation at halding	<20°C FOLI-	holding	VA W	9
Dissipation at holding Max cycles frequency			VV	2.5
Mechanical operation			cycles/h	3600
			cycles/h	3600
Operating times			cycles/h	3600
Operating times	control		cycles/h	3600
Operating times	control in AC		cycles/h	3600
Operating times	control	min	cycles/h ms	3600 8
Operating times	control in AC	min max		
Operating times	control in AC		ms	8
Operating times	control in AC Closing NO		ms	8
Operating times	control in AC Closing NO Opening NO	max	ms ms	8 24
Operating times	control in AC Closing NO	max min max	ms ms	8 24 10 20
Operating times	control in AC Closing NO Opening NO	max min max min	ms ms ms ms	8 24 10 20
Operating times	control in AC Closing NO Opening NO Closing NC	max min max	ms ms ms	8 24 10 20
Mechanical operation Operating times Average time for Us o	control in AC Closing NO Opening NO	max min max min max	ms ms ms ms	8 24 10 20 14 28
Operating times	control in AC Closing NO Opening NO Closing NC	max min max min max min max	ms ms ms ms ms	8 24 10 20 14 28
Operating times Average time for Us o	control in AC Closing NO Opening NO Closing NC	max min max min max	ms ms ms ms	8 24 10 20 14 28
Operating times Average time for Us of the control	control in AC Closing NO Opening NO Closing NC Opening NC	max min max min max min max	ms ms ms ms ms	8 24 10 20 14 28
Operating times Average time for Us of the control	control in AC Closing NO Opening NO Closing NC	max min max min max min max	ms ms ms ms ms	8 24 10 20 14 28 7 18
Operating times Average time for Us of the control	control in AC Closing NO Opening NO Closing NC Opening NC	max min max min max min max at 480V	ms ms ms ms ms	8 24 10 20 14 28 7 18
Operating times Average time for Us of the content	control in AC Closing NO Opening NO Closing NC Opening NC Opening NC	max min max min max min max	ms ms ms ms ms	8 24 10 20 14 28 7 18
Operating times Average time for Us of the control	control in AC Closing NO Opening NO Closing NC Opening NC Opening NC opening NC opening NC opening NC	max min max min max min max at 480V	ms ms ms ms ms	8 24 10 20 14 28 7 18
Operating times Average time for Us of the control	control in AC Closing NO Opening NO Closing NC Opening NC Opening NC	min max min max min max min max at 480V at 600V	ms ms ms ms ms ms	8 24 10 20 14 28 7 18
Operating times Average time for Us of the content	control in AC Closing NO Opening NO Closing NC Opening NC Opening NC opening NC opening NC opening NC	min max min max min max min max at 480V at 600V	ms ms ms ms ms ms	8 24 10 20 14 28 7 18
Operating times Average time for Us of the content	control in AC Closing NO Opening NO Closing NC Opening NC Opening NC of three-phase AC motor erformance for single-phase AC motor	min max min max min max at 480V at 600V	ms ms ms ms ms ms	8 24 10 20 14 28 7 18
Operating times Average time for Us of the control	control in AC Closing NO Opening NO Closing NC Opening NC Opening NC opening NC opening NC opening NC	min max min max min max min max at 480V at 600V	ms ms ms ms ms ms	8 24 10 20 14 28 7 18

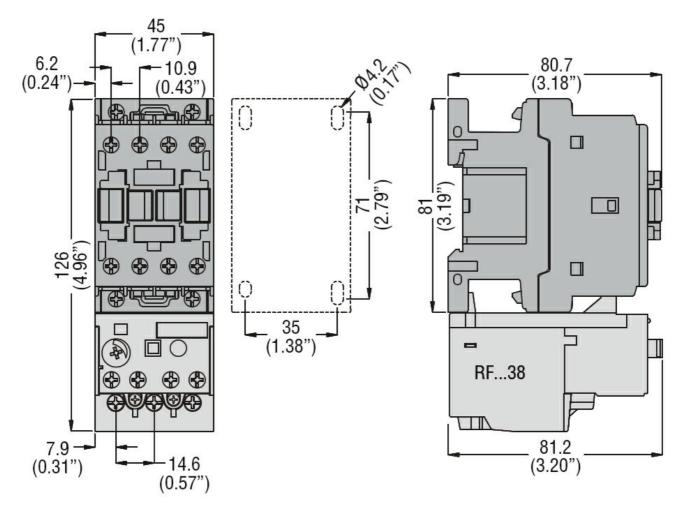




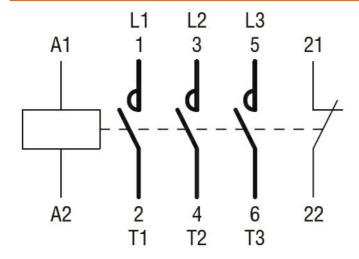
		220/230V	HP	5
		460/480V	HP	7.5
		575/600V	HP	10
General USE				
	Contactor			
		AC current	Α	28
	Auxiliary contacts			
	•	AC voltage	V	600
		AC current	Α	10
		DC voltage	V	250
		DC current	Α	1
Short-circuit protect	tion fuse, 600V			
	High fault			
		Short circuit current	kA	100
		Fuse rating	Α	30
		Fuse class		J
	Standard fault			
		Short circuit current	kA	5
		Fuse rating	Α	70
Contact rating of au	xiliary 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 & Prote	ction			
Pollution degree				3
Dimensions				
	·			

ENERGY AND AUTOMATION

THREE-POLE CONTACTOR, IEC OPERATING CURRENT IE (AC3) = 12A, AC COIL 50/60HZ, 230VAC, 1NC AUXILIARY CONTACT



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



BF1201A230

THREE-POLE CONTACTOR, IEC OPERATING CURRENT IE (AC3) = 12A, AC COIL 50/60HZ, 230VAC, 1NC AUXILIARY CONTACT

CCC			
cULus			
EAC			

ETIM classification

ETIM 8.0

EC000066 -Power contactor, AC switching





			•
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			
	≤24V	Α	20
	48V	Α	20
	75V	Α	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			
120 max carrent to in 200 200 mar 2/1 = 10mb mar 2 police in collect	≤24V	Α	15
	48V	A	13
	75V	A	12
	110V	A	8
	220V	A	2
IEC max current le in DC3-DC5 with L/R ≤ 15ms with 3 poles in series	2200	^	
TEC may content to in DC3-DC3 with E/K > 13ms with 3 poles in series	-24 17	۸	10
	≤24V 48V	A	18
		A	18
	75V	A	15
	110V	A	12
	220V	Α	6
IEC max current le in DC3-DC5 with L/R ≤ 15ms with 4 poles in series		_	
	≤24V	Α	15
	48V	Α	15
	75V	Α	15
	110V	Α	16
	220V	Α	7
Short-time allowable current for 10s (IEC/EN60947-1)		Α	150
Protection fuse			
	gG (IEC)	Α	32
	aM (IEC)	Α	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)			
\	lth	W	2
	AC3	W	0.4
Tightening torque for terminals	7.00	••	U. .
	min	Nm	1.5
	max	Nm	1.8
	min	Ibin	1.1
		lbin	1.5
Tightening torque for coil terminal	max	ווטוו	1.0
rightening torque for contential		Nima	0.0
	min	Nm	0.8
	max	Nm	1
	min	lbin	0.8



		max	Ibin	0.74
	simultaneously connectable		Nr.	2
Conductor section	A.A.O. #4			
	AWG/Kcmil			40
	Clavible w/o lum conductor costice	max		10
	Flexible w/o lug conductor section	min	mm²	1
		min	mm² mm²	1 6
	Flexible c/w lug conductor section	max	111111	0
	r lexible 6/w lug corrudctor section	min	mm²	1
		max	mm²	4
	Flexible with insulated spade lug conductor section			•
	r loxiloto mar inculation openio lag correction coolion	min	mm²	1
		max	mm²	4
D ((''			IP20 when
Power terminal protect	etion according to IEC/EN 60529			properly wired
Mechanical features				
Operating position				
		normal		Vertical plan
		allowable		±30°
Fixing				Screw / DIN rail
				35mm
Weight			g	368
Conductor section				
	AWG/kcmil conductor section			
A 112		max		10
Auxiliary contact chara	acteristics			
The amount of the			۸	4.0
Thermal current Ith	aignation		Α	10
IEC/EN 60947-5-1 de	~		A	10 A600 - P600
IEC/EN 60947-5-1 de	~	2201/		A600 - P600
IEC/EN 60947-5-1 de	~	230V	A	A600 - P600 3
IEC/EN 60947-5-1 de	~	400V	A A	A600 - P600 3 1.9
IEC/EN 60947-5-1 de Operating current AC	15		A	A600 - P600 3
IEC/EN 60947-5-1 de Operating current AC	15	400V 500V	A A A	3 1.9 1.4
IEC/EN 60947-5-1 de Operating current AC Operating current DC	12	400V	A A	A600 - P600 3 1.9
IEC/EN 60947-5-1 de Operating current AC Operating current DC	12	400V 500V 110V	A A A	3 1.9 1.4 5.7
IEC/EN 60947-5-1 de Operating current AC Operating current DC	12	400V 500V 110V 24V	A A A	3 1.9 1.4 5.7
IEC/EN 60947-5-1 de Operating current AC Operating current DC	12	400V 500V 110V	A A A	3 1.9 1.4 5.7
IEC/EN 60947-5-1 de Operating current AC Operating current DC	12	400V 500V 110V 24V 48V	A A A A	A600 - P600 3 1.9 1.4 5.7 5.7 2.9
IEC/EN 60947-5-1 de Operating current AC Operating current DC	12	400V 500V 110V 24V 48V 60V	A A A A A	3 1.9 1.4 5.7 5.7 2.9 2.3
IEC/EN 60947-5-1 de Operating current AC Operating current DC	12	400V 500V 110V 24V 48V 60V 110V	A A A A A	A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25
IEC/EN 60947-5-1 de Operating current AC Operating current DC	12	400V 500V 110V 24V 48V 60V 110V 125V	A A A A A A	A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1
IEC/EN 60947-5-1 de Operating current AC Operating current DC Operating current DC Operating current DC	12	400V 500V 110V 24V 48V 60V 110V 125V 220V	A A A A A A A	A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2
Operating current DC Mechanical life	12	400V 500V 110V 24V 48V 60V 110V 125V 220V	A A A A A A A Cycles	A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2
Operating current DC Operations Mechanical life Electrical life	12	400V 500V 110V 24V 48V 60V 110V 125V 220V	A A A A A A A	A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2
Operating current DC Operating current DC Operating current DC Operating current DC 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	A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2
Operating current DC Operating current DC Operating current DC Operating current DC Operations Mechanical life Electrical life Safety related data	12	400V 500V 110V 24V 48V 60V 110V 125V 220V 600V	A 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 DC Operating current DC Operating current DC Operating current DC Operations Mechanical life Electrical life Safety related data	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 A Cycles cycles	A600 - P600 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 DC Operating current DC Operating current DC Operating current DC Operations Mechanical life Electrical life Safety related data Performance level B1	112 113 Od according to EN/ISO 13489-1	400V 500V 110V 24V 48V 60V 110V 125V 220V 600V	A A A A A A A A Cycles cycles	A600 - P600 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 DC Operating current DC Operating current DC Operating current DC 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 A Cycles cycles	A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 20000000 20000000 20000000 yes
Operating current DC Operating current DC Operating current DC Operating current DC Operations Mechanical life Electrical life Safety related data Performance level B1	112 113 Od according to EN/ISO 13489-1	400V 500V 110V 24V 48V 60V 110V 125V 220V 600V	A A A A A A A A Cycles cycles	A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 20000000 20000000 20000000



AC operating voltage	at 50/60Hz		V	400
to operating rollas	-			
	of 50/60Hz coil powered at 50Hz			
	pick-up		0/116	0.0
		min	%Us %Us	80 110
	drop-out	max	/ ₀ 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 co	nsumption at 20°C			
	of 50/60Hz coil powered at 50Hz		,	
		in-rush	VA	75
	-f F0/0011 1 1 0011	holding	VA	9
	of 50/60Hz coil powered at 60Hz	المناسية.	١/٨	70
		in-rush holding	VA VA	70 6.5
	of 60Hz coil powered at 60Hz	Holding	VA	0.5
	of our iz con powered at our iz	in-rush	VA	75
		holding	VA	9
Dissipation at holdi			W	2.5
Max cycles frequen	-			
Mechanical operation			cycles/h	3600
Operating times				
Average time for U	s control			
	in AC			
	Closing NO			
		min	ms	8
	0 : 110	min max	ms ms	8 24
	Opening NO	max	ms	24
	Opening NO	max min	ms ms	10
	, -	max	ms	24
	Opening NO Closing NC	max min max	ms ms ms	241020
	, -	max min max min	ms ms ms	24102014
	Closing NC	max min max	ms ms ms	241020
	, -	max min max min	ms ms ms	24102014
	Closing NC	max min max min max	ms ms ms ms	2410201428
JL technical data	Closing NC	max min max min max min	ms ms ms ms ms	24 10 20 14 28 7
	Closing NC	max min max min max min max	ms ms ms ms ms	24 10 20 14 28 7 18
	Closing NC Opening NC	max min max min max min max at 480V	ms ms ms ms ms	24 10 20 14 28 7 18
Full-load current (F	Closing NC Opening NC (LA) for three-phase AC motor	max min max min max min max	ms ms ms ms ms	24 10 20 14 28 7 18
Full-load current (F	Closing NC Opening NC (LA) for three-phase AC motor	max min max min max min max at 480V	ms ms ms ms ms	24 10 20 14 28 7 18
Full-load current (F	Closing NC Opening NC (LA) for three-phase AC motor	min max min max min max at 480V at 600V	ms ms ms ms ms A A	24 10 20 14 28 7 18
Full-load current (F	Closing NC Opening NC (LA) for three-phase AC motor	min max min max min max min max at 480V at 600V	ms ms ms ms ms A A	24 10 20 14 28 7 18
JL technical data Full-load current (F Yielded mechanica	Closing NC Opening NC LA) for three-phase AC motor I performance for single-phase AC motor	min max min max min max at 480V at 600V	ms ms ms ms ms A A	24 10 20 14 28 7 18
Full-load current (F	Closing NC Opening NC (LA) for three-phase AC motor	min max min max min max min max at 480V at 600V	ms ms ms ms ms A A	24 10 20 14 28 7 18

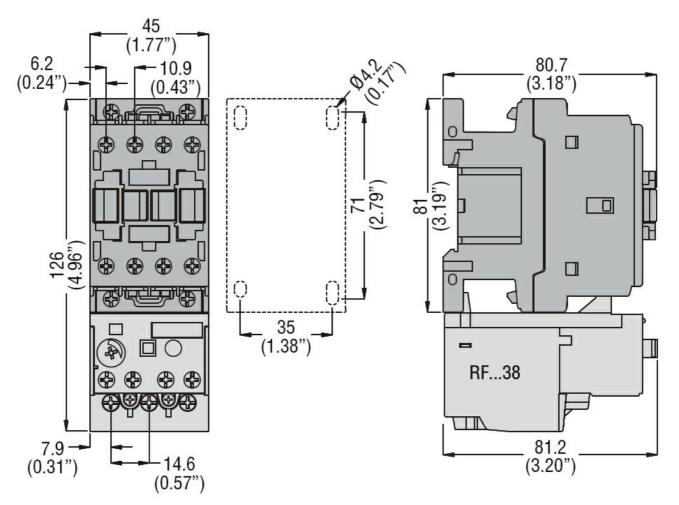




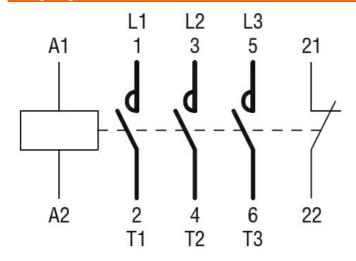
		220/230V	HP	5
		460/480V	HP	7.5
		575/600V	HP	10
General USE				
	Contactor			
		AC current	Α	28
	Auxiliary contacts			
	•	AC voltage	V	600
		AC current	Α	10
		DC voltage	V	250
		DC current	Α	1
Short-circuit protect	tion fuse, 600V			
	High fault			
		Short circuit current	kA	100
		Fuse rating	Α	30
		Fuse class		J
	Standard fault			
		Short circuit current	kA	5
		Fuse rating	Α	70
Contact rating of au	ixiliary 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 & Prote	ection			
Pollution degree				3
Dimensions				

ENERGY AND AUTOMATION

THREE-POLE CONTACTOR, IEC OPERATING CURRENT IE (AC3) = 12A, AC COIL 50/60HZ, 400VAC, 1NC AUXILIARY CONTACT



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



BF1201A400

THREE-POLE CONTACTOR, IEC OPERATING CURRENT IE (AC3) = 12A, AC COIL 50/60HZ, 400VAC, 1NC AUXILIARY CONTACT

CCC		
cULus		
EAC		

ETIM classification

ETIM 8.0

EC000066 -Power contactor, AC switching







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)	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 le in DC1 with L/R ≤ 1ms with 1 poles in series	_	
≤24V	Α	17
48V	Α	15
75V	A	13
110V	A	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	A	18
110V	A	13
220V	Α	1
IEC max current le in DC1 with L/R ≤ 1ms with 3 poles in series	_	22
≤24V	A	22
48V	A	22
75V	A	20
110V	Α	16





	220V	Α	11
IEC max current le in DC1 with L/R ≤ 1ms with 4 poles in series			
	≤24V	Α	20
	48V	Α	20
	75V	Α	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	A	12
	110V	A	8
	220V	A	2
IEC max current le in DC3-DC5 with L/R ≤ 15ms with 3 poles in series	22U V		
TEO MAX CUITETILIE III DOG-DOG WILLI LIN = 15HIS WILL 3 POLES III SELIES	~2A\/	۸	10
	≤24V 48V	A	18
		A	18
	75V	A	15
	110V	A	12
	220V	A	6
IEC max current le in DC3-DC5 with L/R ≤ 15ms with 4 poles in series		_	
	≤24V	Α	15
	48V	Α	15
	75V	Α	15
	110V	Α	16
	220V	Α	7
Short-time allowable current for 10s (IEC/EN60947-1)		Α	150
Protection fuse			
	gG (IEC)	Α	32
	aM (IEC)	Α	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)			- -
. The shortest por port (artitago raido)	lth	W	2
	AC3	W	0.4
Tightening torque for terminals	7,00	V V	J. 1
rightening torque for terminals	min	Nm	1.5
		Nm	1.8
	max		
	min	lbin Ibin	1.1
Tightoning toyour for call town-in-1	max	lbin	1.5
Tightening torque for coil terminal	·		0.0
	min	Nm	0.8
	max	Nm	1
	min	lbin	0.8





		max	Ibin	0.74
	simultaneously connectable		Nr.	2
Conductor section	A1110/16 11			
	AWG/Kcmil			40
	Florible/s los conductos continu	max		10
	Flexible w/o lug conductor section	min	mm²	1
		max	mm²	1 6
	Flexible c/w lug conductor section	IIIax	111111	U
	Tickible 6/Wildg conductor section	min	mm²	1
		max	mm²	4
	Flexible with insulated spade lug conductor section			
		min	mm²	1
		max	mm²	4
Dower terminal prote	otion according to IFC/FN 60500			IP20 when
Power terminal prote	ction according to IEC/EN 60529			properly wired
Mechanical features				
Operating position				
		normal		Vertical plan
		allowable		±30°
Fixing				Screw / DIN rail
Majabt			~	35mm 358
Weight Conductor section			g	330
Conductor Section	AWG/kcmil conductor section			
	AVVG/KCITIII COTIQUCTOF Section	max		10
Auxiliary contact char	acteristics	IIIax		10
Thermal current Ith	40101101100		Α	10
IEC/EN 60947-5-1 de	esignation			A600 - P600
Operating current AC	_ •			
. 0			۸	3
		230V	Α	
		230V 400V	A	1.9
Operating current DC	12	400V	Α	1.9
Operating current DC	12	400V	Α	1.9
		400V 500V	A A	1.9 1.4
		400V 500V 110V 24V	A A A	1.9 1.4 5.7 5.7
		400V 500V 110V 24V 48V	A A A A	1.9 1.4 5.7 5.7 2.9
		400V 500V 110V 24V 48V 60V	A A A A A	1.9 1.4 5.7 5.7 2.9 2.3
		400V 500V 110V 24V 48V 60V 110V	A A A A A	1.9 1.4 5.7 5.7 2.9 2.3 1.25
Operating current DC Operating current DC		400V 500V 110V 24V 48V 60V 110V 125V	A A A A A A	1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1
		400V 500V 110V 24V 48V 60V 110V 125V 220V	A A A A A A A	1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55
Operating current DC		400V 500V 110V 24V 48V 60V 110V 125V	A A A A A A	1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1
Operating current DC		400V 500V 110V 24V 48V 60V 110V 125V 220V	A A A A A A A A	1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2
Operating current DC Operations Mechanical life		400V 500V 110V 24V 48V 60V 110V 125V 220V	A A A A A A A A Cycles	1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2
Operations Mechanical life Electrical life		400V 500V 110V 24V 48V 60V 110V 125V 220V	A A A A A A A A	1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2
Operating current DC Operations Mechanical life Electrical life Safety related data	13	400V 500V 110V 24V 48V 60V 110V 125V 220V	A A A A A A A A Cycles	1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2
Operating current DC Operations Mechanical life Electrical life Safety related data		400V 500V 110V 24V 48V 60V 110V 125V 220V 600V	A A A A A A A A Cycles cycles	1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 20000000
Operating current DC Operations Mechanical life Electrical life Safety related data	10d 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	1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 20000000 20000000
Operating current DC Operations Mechanical life Electrical life Safety related data Performance level B	10d according to EN/ISO 13489-1	400V 500V 110V 24V 48V 60V 110V 125V 220V 600V	A A A A A A A A Cycles cycles	1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 20000000 20000000
Operating current DC Operations Mechanical life Electrical life Safety related data Performance level B Mirror contats accord	10d 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	1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 20000000 20000000 20000000 yes
Operating current DC Operations Mechanical life Electrical life Safety related data Performance level B	10d 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	1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 20000000 20000000



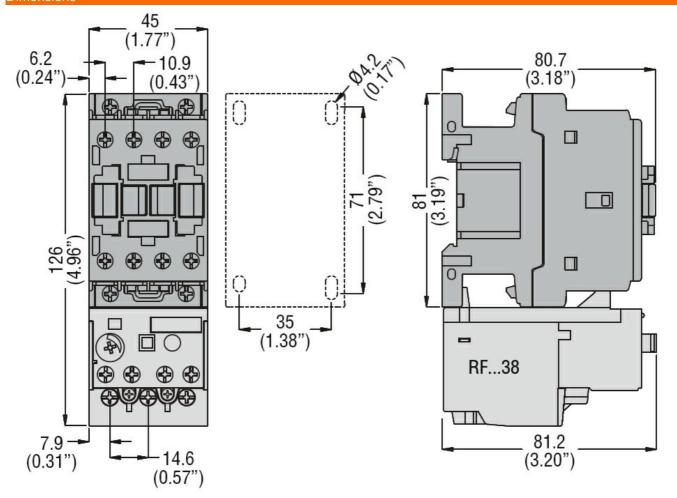


Rated AC voltage at 60Hz		V	24
AC operating voltage			
of 60Hz coil powered at 60Hz			
pick-up			
	min	%Us	80
	max	%Us	110
drop-out		0/11-	00
	min	%Us %Us	20 55
AC average coil consumption at 20°C	max	/005	55
of 60Hz coil powered at 60Hz			
01 001 12 0011 poworod at 001 12	in-rush	VA	75
	holding	VA	9
Dissipation at holding ≤20°C 50Hz	<u> </u>	W	2.5
Max cycles frequency			
Mechanical operation		cycles/h	3600
Operating times			
Average time for Us control			
in AC			
Closing NO			0
	min	ms	8 24
Opening NO	max	ms	24
Opening NO	min	ms	10
	max	ms	20
Closing NC			
S	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	ot 400\/	۸	11
	at 480V at 600V	A A	11 11
Yielded mechanical performance	at 000 v		11
for single-phase AC motor			
isi single phase no motel	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	^ ^ ^ ·	Α.	00
Appellant contacts	AC current	Α	28
Auxiliary contacts	AC valtage	W	600
	AC voltage AC current	V A	600 10
	DC voltage	V	250
	DO VOITAGE	v	
	DC current	Α	1
Short-circuit protection fuse, 600V	DC current	Α	1





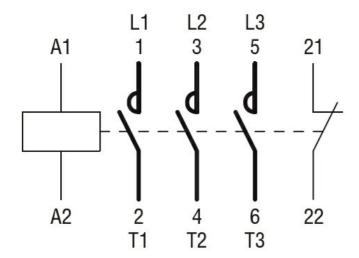
	Short circuit current	kA	100
	Fuse rating	Α	30
	Fuse class		J
Standard fault			·
	Short circuit current	kA	5
	Fuse rating	Α	70
Contact rating of auxiliary contacts according to UL			A600 - P600
Ambient conditions			
Temperature			
Operating temperature			
	min	°C	-50
	max	°C	70
Storage temperature			
	min	°C	-60
	max	°C	80
Max altitude		m	3000
Resistance & Protection			
Pollution degree			3
Dimensions			



Wiring diagrams

ENERGY AND AUTOMATION

THREE-POLE CONTACTOR, IEC OPERATING CURRENT IE (AC3) = 12A, AC COIL 60HZ, 24VAC, 1NC AUXILIARY CONTACT



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







Product designation Power contactor Product type designation BF12 Contact characteristics Nr. 3 Number of poles Rated insulation voltage Ui IEC/EN ٧ 690 k۷ Rated impulse withstand voltage Uimp 6 Operational frequency min Нъ 25 Hz 400 max IEC Conventional free air thermal current Ith 28 Α 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) 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 22 Α 22 48V Α 75V Α 20 110V 16





	220V	Α	11
IEC max current le in DC1 with L/R ≤ 1ms with 4 poles in series			
	≤24V	Α	20
	48V	Α	20
	75V	Α	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	A	12
	110V	A	8
	220V	A	2
IEC max current le in DC3-DC5 with L/R ≤ 15ms with 3 poles in series	22U V		
TEO MAX CUITETILIE III DOG-DOG WILLI LIN = 15HIS WILL 3 POLES III SELIES	~2A\/	۸	10
	≤24V 48V	A	18
		A	18
	75V	A	15
	110V	A	12
	220V	A	6
IEC max current le in DC3-DC5 with L/R ≤ 15ms with 4 poles in series		_	
	≤24V	Α	15
	48V	Α	15
	75V	Α	15
	110V	Α	16
	220V	Α	7
Short-time allowable current for 10s (IEC/EN60947-1)		Α	150
Protection fuse			
	gG (IEC)	Α	32
	aM (IEC)	Α	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)			- -
. The shortest por port (artitago raido)	lth	W	2
	AC3	W	0.4
Tightening torque for terminals	7,00	V V	J. 1
rightening torque for terminals	min	Nm	1.5
		Nm	1.8
	max		
	min	lbin Ibin	1.1
Tightoning toyour for call town-in-1	max	lbin	1.5
Tightening torque for coil terminal	•		0.0
	min	Nm	0.8
	max	Nm	1
	min	lbin	0.8





		max	lbin	0.74
	simultaneously connectable		Nr.	2
Conductor section				
	AWG/Kcmil			
		max		10
	Flexible w/o lug conductor section		2	
		min	mm²	1
	Electrical Language Control	max	mm²	6
	Flexible c/w lug conductor section		2	4
		min	mm²	1
	Florible with insulated and deliver and distance of a	max	mm²	4
	Flexible with insulated spade lug conductor section		· · 2	4
		min	mm² mm²	1 4
		max	111111	IP20 when
Power terminal prote	ction according to IEC/EN 60529			properly wired
Mechanical features				proporty who
Operating position				
. 01		normal		Vertical plan
		allowable		±30°
Fixing a				Screw / DIN rail
Fixing				35mm
Weight			g	364
Conductor section				
	AWG/kcmil conductor section			
		max		10
Auxiliary contact char	racteristics			
Thermal current Ith			Α	10
IEC/EN 60947-5-1 de				A600 - P600
Operating current AC	C15			
		230V	Α	3
		400V	Α	1.9
		500V	Α	1.4
Operating current DC	C12			
		110V	Α	5.7
Operating current DC	213			
		24V	Α	5.7
		48V	A	2.9
		60V	A	2.3
		110V	A	1.25
		125V	A	1.1
		220V 600V	A A	0.55
		muu/	A	0.2
Operations		000 V		
		000 V		
Mechanical life		0001	cycles	20000000
Mechanical life Electrical life		0001		
Mechanical life Electrical life Safety related data	10d according to FN/ISO 13/180-1	0001	cycles	20000000
Mechanical life Electrical life Safety related data	10d according to EN/ISO 13489-1		cycles cycles	20000000 2000000
Mechanical life Electrical life Safety related data	-	rated load	cycles cycles	20000000 2000000 2000000
Mechanical life Electrical life Safety related data Performance level B	m _e		cycles cycles	2000000 2000000 2000000 20000000
	-	rated load	cycles cycles	20000000 2000000 2000000



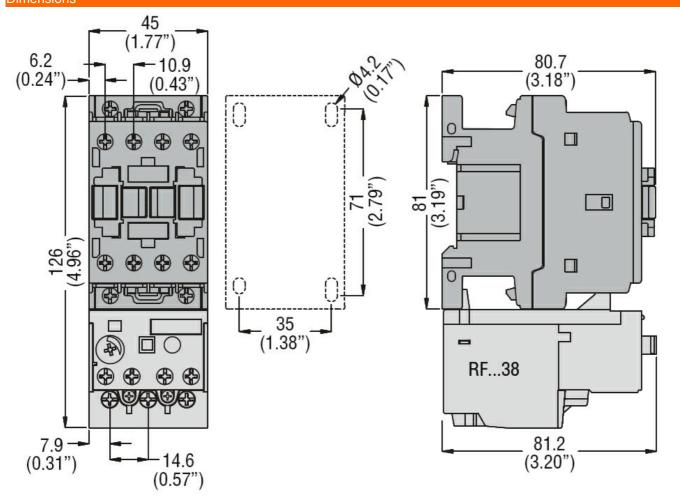


Rated AC voltage at 60Hz		V	48
AC operating voltage			
of 60Hz coil powered at 60Hz			
pick-up			
	min	%Us	80
	max	%Us	110
drop-out		0/11-	00
	min	%Us %Us	20 55
AC average coil consumption at 20°C	max	/605	55
of 60Hz coil powered at 60Hz			
01 001 12 0011 powerod at 001 12	in-rush	VA	75
	holding	VA	9
Dissipation at holding ≤20°C 50Hz	<u> </u>	W	2.5
Max cycles frequency			
Mechanical operation		cycles/h	3600
Operating times			
Average time for Us control			
in AC			
Closing NO			0
	min	ms	8
Opening NO	max	ms	24
Opening NO	min	ms	10
	max	ms	20
Closing NC		•	
S	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	ot 400\/	۸	11
	at 480V at 600V	A A	11 11
Yielded mechanical performance	at 000 v		11
for single-phase AC motor			
isi single phase //o 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	AO	Λ	20
Austrian contacts	AC current	Α	28
Auxiliary contacts	AC valtage	\/	600
	AC voltage AC current	V A	10
	DC voltage	V	250
	DC voltage DC current	A	1
01 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		* * *	
Short-circuit protection fuse, 600V			





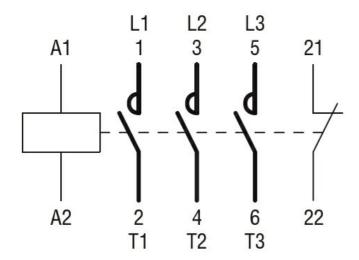
		Short circuit current	kA	100
		Fuse rating	Α	30
		Fuse class		J
	Standard fault			
		Short circuit current	kA	5
		Fuse rating	Α	70
Contact rating of auxilia	ary contacts according to UL			A600 - P600
Ambient conditions				
Temperature				
	Operating temperature			
		min	°C	-50
		max	°C	70
	Storage temperature			
		min	°C	-60
		max	°C	80
Max altitude			m	3000
Resistance & Protection	n			
Pollution degree				3
Dimensions				



Wiring diagrams

ENERGY AND AUTOMATION

THREE-POLE CONTACTOR, IEC OPERATING CURRENT IE (AC3) = 12A, AC COIL 60HZ, 48VAC, 1NC AUXILIARY CONTACT



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







Product designation Product type designation			Power contactor 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	A	6
150	220V	Α	
IEC max current le in DC1 with L/R ≤ 1ms with 2 poles in series	10.437		22
	≤24V	A	20
	48V	A	20
	75V	A	18
	110V	A	13
IEC may current to in DC1 with L/B < 1mg with 2 notes in series	220V	Α	
IEC max current le in DC1 with L/R ≤ 1ms with 3 poles in series	~0.AV	۸	22
	≤24V	A	22
	48V	A	22
	75V 110V	A A	20 16
	1100	^	10





	220V	Α	11
IEC max current le in DC1 with L/R ≤ 1ms with 4 poles in series			
·	≤24V	Α	20
	48V	Α	20
	75V	Α	20
	110V	Α	16
	220V	Α	12
IEC max current le in DC3-DC5 with L/R ≤ 15ms with 1 poles in series	220 0	,,	12
120 max current to in 200-200 with E/N = 10m3 with 1 poles in 30m63	≤24V	Α	12
	48V	A	11
	75V	A	10
	110V	A	2
150 DOS DOS WILLIAM WI	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 current to in 200 200 with 2/11 = forme with 1 police in conce	≤24V	Α	15
	48V	Α	15
	75V	A	15
	110V		
	220V	A	16 7
Object times allowed by assess for AOs (IEO/ENCOOAT A)	220 V	A	
Short-time allowable current for 10s (IEC/EN60947-1)		Α	150
Protection fuse	• ·•	_	
	gG (IEC)	Α	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
	AC3	W	0.4
Tightening torque for terminals	7.00		• • • • • • • • • • • • • • • • • • • •
gsrg torquo for torrimitato	min	Nm	1.5
	max	Nm	1.8
	min	Ibin	1.1
		Ibin	1.5
Tightoning targue for sail terminal	max	ווטוו	١.ט
Tightening torque for coil terminal		N.I.	0.0
	min	Nm	0.8
	max	Nm	1
	min	Ibin	0.8





		max	lbin	0.74
	simultaneously connectable		Nr.	2
Conductor section	AMA # # 11			
	AWG/Kcmil			4.0
	Flavible w/s has an distance dies	max		10
	Flexible w/o lug conductor section	min	na na 2	4
		min	mm² mm²	1 6
	Flexible c/w lug conductor section	max	111111	O
	Tiexible C/W lug conductor section	min	mm²	1
		max	mm²	4
	Flexible with insulated spade lug conductor section	max		7
	The Albie With Insulated space rug conductor section	min	mm²	1
		max	mm²	4
				IP20 when
Power terminal prote	ction according to IEC/EN 60529			properly wired
Mechanical features				
Operating position				
		normal		Vertical plan
		allowable		±30°
Fixing				Screw / DIN rail 35mm
Weight				356
Conductor section			g	330
Conductor Section	AWG/kcmil conductor section			
	AVVG/KCITIII COTIQUCTOF Section	max		10
Auxiliary contact char	acteristics	IIIdX		10
· · · · · · · · · · · · · · · · · · ·	dotoriotios		^	4.0
Thermal current Ith			А	1()
Thermal current Ith IEC/EN 60947-5-1 de	esignation		Α	10 A600 - P600
IEC/EN 60947-5-1 de	-		A	10 A600 - P600
	-	230V	A A	A600 - P600
IEC/EN 60947-5-1 de	-	230V 400V		
IEC/EN 60947-5-1 de	-		A	A600 - P600 3
IEC/EN 60947-5-1 de Operating current AC	15	400V	A A	A600 - P600 3 1.9
IEC/EN 60947-5-1 de Operating current AC	15	400V	A A	A600 - P600 3 1.9
IEC/EN 60947-5-1 de Operating current AC	15	400V 500V	A A A	3 1.9 1.4
IEC/EN 60947-5-1 de Operating current AC	15	400V 500V	A A A	3 1.9 1.4
IEC/EN 60947-5-1 de Operating current AC	15	400V 500V 110V	A A A	3 1.9 1.4 5.7
IEC/EN 60947-5-1 de Operating current AC	15	400V 500V 110V 24V 48V 60V	A A A	3 1.9 1.4 5.7 5.7 2.9 2.3
IEC/EN 60947-5-1 de Operating current AC	15	400V 500V 110V 24V 48V 60V 110V	A A A A	A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25
IEC/EN 60947-5-1 de Operating current AC	15	400V 500V 110V 24V 48V 60V 110V 125V	A A A A A A	A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1
IEC/EN 60947-5-1 de Operating current AC	15	400V 500V 110V 24V 48V 60V 110V 125V 220V	A A A A A A A	A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55
Operating current AC Operating current DC Operating current DC	15	400V 500V 110V 24V 48V 60V 110V 125V	A A A A A A	A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1
IEC/EN 60947-5-1 de Operating current AC Operating current DC Operating current DC Operating current DC	15	400V 500V 110V 24V 48V 60V 110V 125V 220V	A A A A A A A	A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2
Operating current DC	15	400V 500V 110V 24V 48V 60V 110V 125V 220V	A A A A A A A Cycles	A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2
Operating current DC Operations Mechanical life Electrical life	15	400V 500V 110V 24V 48V 60V 110V 125V 220V	A A A A A A A	A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2
Operating current DC Electrical life Safety related data	212	400V 500V 110V 24V 48V 60V 110V 125V 220V	A A A A A A A Cycles	A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2
Operating current DC Electrical life Safety related data	15	400V 500V 110V 24V 48V 60V 110V 125V 220V 600V	A 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 DC Electrical life Safety related data	10d 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	A600 - P600 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 DC Operations Mechanical life Electrical life Safety related data Performance level B	115 112 113 10d according to EN/ISO 13489-1	400V 500V 110V 24V 48V 60V 110V 125V 220V 600V	A A A A A A A A Cycles cycles	A600 - P600 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 DC Operating current DC Operating current DC Operating current DC Operations Mechanical life Electrical life Safety related data Performance level B	10d 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	A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 20000000 20000000 20000000 yes
Operating current DC Operations Mechanical life Electrical life Safety related data Performance level B	115 112 113 10d 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	A600 - P600 3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 20000000 20000000 20000000



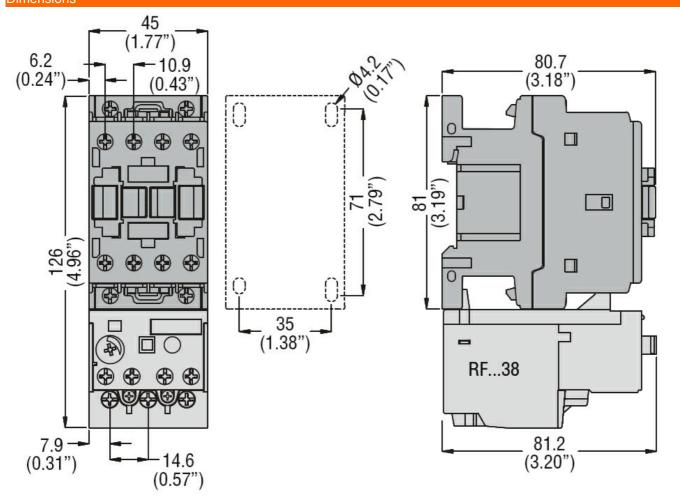


Rated AC voltage at 60Hz		V	120
AC operating voltage			
of 60Hz coil powered at 60Hz			
pick-up			
	min	%Us	80
	max	%Us	110
drop-out			
	min	%Us	20
10000	max	%Us	55
AC average coil consumption at 20°C			
of 60Hz coil powered at 60Hz			7-
	in-rush	VA	75
D' '- '- '- '- '- '- '- '- '- '- '- '- '-	holding	VA	9
Dissipation at holding ≤20°C 50Hz		W	2.5
Max cycles frequency		avala a /b	2000
Mechanical operation		cycles/h	3000
Operating times Average time for Us control			
Average time for Us control in AC			
Closing NO			
Closing NO	min	ms	8
	max	ms	24
Opening NO			
3, 5 mg	min	ms	10
	max	ms	20
Closing NC			
Ç	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	Α	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	000/000/	LID	_
	200/208V	HP	5
	220/230V	HP	5
	460/480V	HP HP	7.5 10
General USE	575/600V	пг	10
General USE Contactor			
CONTACTO	AC current	Α	28
Auvilian/ contacts	AC Current	^	۷۵
Auxiliary contacts	AC valtage	\/	600
	AC voltage AC current	V	
		A V	10 250
	DC voltage DC current	V A	250 1
Short-circuit protection fuse, 600V	DO CUITEIIL		1
Short official protoction ruse, 000 v			



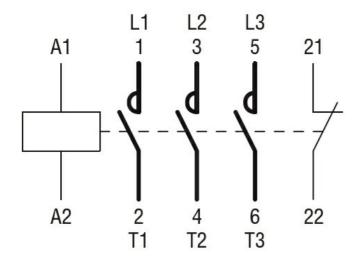


		Short circuit current	kA	100
		Fuse rating	Α	30
		Fuse class		J
	Standard fault			
		Short circuit current	kA	5
		Fuse rating	Α	70
Contact rating of auxilia	ary contacts according to UL			A600 - P600
Ambient conditions				
Temperature				
	Operating temperature			
		min	°C	-50
		max	°C	70
	Storage temperature			
		min	°C	-60
		max	°C	80
Max altitude			m	3000
Resistance & Protection	n			
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







Product designation Power contactor Product type designation BF12 Contact characteristics Nr. 3 Number of poles Rated insulation voltage Ui IEC/EN ٧ 690 k۷ Rated impulse withstand voltage Uimp 6 Operational frequency min Нъ 25 Hz 400 max IEC Conventional free air thermal current Ith 28 Α 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) 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 22 Α 22 48V Α 75V Α 20 110V 16





	220V	Α	11
IEC max current le in DC1 with L/R ≤ 1ms with 4 poles in series			
	≤24V	Α	20
	48V	Α	20
	75V	Α	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	A	12
	110V	A	8
	220V	A	2
IEC max current le in DC3-DC5 with L/R ≤ 15ms with 3 poles in series	22U V		
TEO MAX CUITETILIE III DOG-DOG WILLI LIN = 15HIS WILL 3 POLES III SELIES	~2A\/	۸	10
	≤24V 48V	A	18
		A	18
	75V	A	15
	110V	A	12
	220V	A	6
IEC max current le in DC3-DC5 with L/R ≤ 15ms with 4 poles in series		_	
	≤24V	Α	15
	48V	Α	15
	75V	Α	15
	110V	Α	16
	220V	Α	7
Short-time allowable current for 10s (IEC/EN60947-1)		Α	150
Protection fuse			
	gG (IEC)	Α	32
	aM (IEC)	Α	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)			- -
. The shortest por port (artitago raido)	lth	W	2
	AC3	W	0.4
Tightening torque for terminals	7,00	V V	J. 1
rightening torque for terminals	min	Nm	1.5
		Nm	1.8
	max		
	min	lbin Ibin	1.1
Tightoning toyour for call town-in-1	max	lbin	1.5
Tightening torque for coil terminal	·		0.0
	min	Nm	0.8
	max	Nm	1
	min	lbin	0.8





imultaneously connectable	max	Ibin Nr.	0.74
imultaneously connectable		INF.	
AMG/Komil			
AVG/Reniii	may		10
Flexible w/o lug conductor section	max		10
Trexitate thre ray contaction contain	min	mm²	1
			6
Flexible c/w lug conductor section			
G	min	mm²	1
	max	mm²	4
Flexible with insulated spade lug conductor section	1		
	min	mm²	1
	max	mm²	4
tion according to IEC/EN 60529			IP20 when
ion according to IEC/EN 00329			properly wired
	normal		Vertical plan
	allowable		±30°
			Screw / DIN rail
			35mm
		<u>g</u>	350
ANAC // comit comply atom a pation			
AVVG/kcmii conductor section	may		10
ctoristics	IIIdx		10
otenstios		Α	10
signation		,,	A600 - P600
-			7,000 1,000
	230V	Α	3
		Α	1.9
		Α	1.4
2			
	110V	Α	5.7
3			
	24V	Α	5.7
	48V	Α	2.9
	60V	Α	2.3
	110V	Α	1.25
			4.4
	125V	Α	1.1
	220V	Α	0.55
	220V	A A	0.55 0.2
	220V	A A cycles	0.55 0.2 20000000
	220V	A A	0.55 0.2
	220V	A A cycles	0.55 0.2 20000000
Od according to EN/ISO 13489-1	220V 600V	A A cycles	0.55 0.2 20000000 2000000
•	220V 600V	A A cycles cycles	0.55 0.2 20000000 2000000 2000000
n	220V 600V	A A cycles	0.55 0.2 20000000 2000000 2000000 20000000
•	220V 600V	A A cycles cycles	0.55 0.2 20000000 2000000 2000000
	AWG/Kcmil Flexible w/o lug conductor section Flexible c/w lug conductor section Flexible with insulated spade lug conductor section tion according to IEC/EN 60529 AWG/kcmil conductor section accertistics signation 15	Flexible w/o lug conductor section Flexible c/w lug conductor section Flexible with insulated spade lug conductor section min max Flexible with insulated spade lug conductor section min max tion according to IEC/EN 60529 AWG/kcmil conductor section max allowable AWG/kcmil conductor section max cteristics 230V 400V 500V 12 110V 13 24V 48V 60V	Flexible w/o lug conductor section



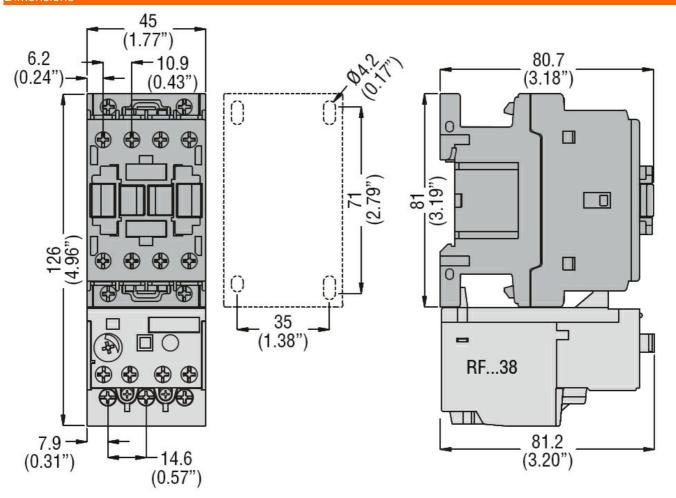


Rated AC voltage at			V	220
AC operating voltage				
	of 60Hz coil powered at 60Hz			
	pick-up	min	%Us	90
		min	%Us %Us	80 110
	drop-out	max	70US	110
	αιορ-οαί	min	%Us	20
		max	%Us	55
AC average coil con	sumption at 20°C	Пах	7000	
g	of 60Hz coil powered at 60Hz			
	5. 55 <u> </u>	in-rush	VA	75
		holding	VA	9
Dissipation at holdin	g ≤20°C 50Hz	<u> </u>	W	2.5
Max cycles frequenc				
Mechanical operation			cycles/h	3600
Operating times				
Average time for Us				
	in AC Closing NO			
	Ciosing ivo	min	ms	8
		max	ms	24
	Opening NO	παλ	1113	∠ ¬
	oponing ito	min	ms	10
		max	ms	20
	Closing NC			
	3 - 3 - 3	min	ms	14
		max	ms	28
	Opening NC			
		min	ms	7
		max	ms	18
JL technical data				
Full-load current (FL	A) for three-phase AC motor			
		at 480V	Α	11
		at 600V	Α	11
Yielded mechanical				
	for single-phase AC motor	440/4001	LIB	4
		110/120V	HP	1
	for three phases AQ ===t==	230V	HP	2
	for three-phase AC motor	200/2001	ПD	5
		200/208V 220/230V	HP HP	5 5
		460/480V	HP HP	ວ 7.5
		575/600V	пг HP	1.5
General USE		37 3/000 V	111	10
Control COL	Contactor			
	Contactor	AC current	Α	28
	Auxiliary contacts	/ C Garront	,,	
	. Issuinary corridate	AC voltage	V	600
		AC current	Ā	10
				250
		ADSTION : J(I	\/	7:00
		DC voltage DC current	V A	
Short-circuit protecti	on fuse, 600V	DC voltage DC current	A	1

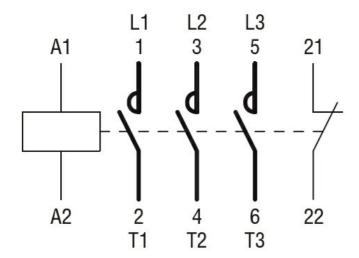




	Short circuit current	kA	100
	Fuse rating	Α	30
	Fuse class		J
Standard fault			·
	Short circuit current	kA	5
	Fuse rating	Α	70
Contact rating of auxiliary contacts according to UL			A600 - P600
Ambient conditions			
Temperature			
Operating temperature			
	min	°C	-50
	max	°C	70
Storage temperature			
	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

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ETIM classification

ETIM 8.0

EC000066 -Power contactor, AC switching







Product designation Power contactor Product type designation BF12 Contact characteristics Nr. 3 Number of poles Rated insulation voltage Ui IEC/EN ٧ 690 k۷ Rated impulse withstand voltage Uimp 6 Operational frequency min Нъ 25 Hz 400 max IEC Conventional free air thermal current Ith 28 Α 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) 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 22 Α 22 48V Α 75V Α 20 110V 16





	220V	Α	11
IEC max current le in DC1 with L/R ≤ 1ms with 4 poles in series			
	≤24V	Α	20
	48V	Α	20
	75V	Α	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	A	12
	110V	A	8
	220V	A	2
IEC max current le in DC3-DC5 with L/R ≤ 15ms with 3 poles in series	22U V		
TEO MAX CUITETILIE III DOG-DOG WILLI LIN = 15HIS WILL 3 POLES III SELIES	~2A\/	۸	10
	≤24V 48V	A	18
		A	18
	75V	A	15
	110V	A	12
	220V	A	6
IEC max current le in DC3-DC5 with L/R ≤ 15ms with 4 poles in series		_	
	≤24V	Α	15
	48V	Α	15
	75V	Α	15
	110V	Α	16
	220V	Α	7
Short-time allowable current for 10s (IEC/EN60947-1)		Α	150
Protection fuse			
	gG (IEC)	Α	32
	aM (IEC)	Α	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)			- -
. The shortest por port (artitago raido)	lth	W	2
	AC3	W	0.4
Tightening torque for terminals	7,00	V V	J. 1
rightening torque for terminals	min	Nm	1.5
		Nm	1.8
	max		
	min	lbin Ibin	1.1
Tightoning toyour for call town-in-1	max	lbin	1.5
Tightening torque for coil terminal	•		0.0
	min	Nm	0.8
	max	Nm	1
	min	lbin	0.8





	a simultanagualy gannagtable	max	Ibin Nr.	0.74
Conductor section	s simultaneously connectable		INF.	
Conductor section	AWG/Kcmil			
	AWO/Remiii	max		10
	Flexible w/o lug conductor section	max		10
	Tionible W/o lag conductor coolien	min	mm²	1
		max	mm²	6
	Flexible c/w lug conductor section			
	G	min	mm²	1
		max	mm²	4
	Flexible with insulated spade lug conductor section	n		
		min	mm²	1
		max	mm²	4
Power terminal prote	ection according to IEC/EN 60529			IP20 when
<u> </u>				properly wired
Mechanical features				
Operating position				
		normal		Vertical plan
		allowable		±30°
Fixing				Screw / DIN rail
Maight				35mm 352
Weight Conductor section			g	352
Conductor section	AWG/kcmil conductor section			
	AVVG/KCITIII CONDUCTOR Section	max		10
Auxiliary contact cha	racteristics	IIIdx		10
Thermal current Ith	Table 1000		А	10
IEC/EN 60947-5-1 d	lesignation			A600 - P600
	•			
Operating current A(01 د			
Operating current AC	J10	230V	Α	3
Operating current A(515	230V 400V	A A	3 1.9
Operating current A(J10			
		400V	Α	1.9
		400V	Α	1.9
Operating current D0	C12	400V 500V	A A	1.9 1.4
Operating current D0	C12	400V 500V	A A	1.9 1.4
Operating current D0	C12	400V 500V 110V	A A	1.9 1.4 5.7
Operating current D0	C12	400V 500V 110V 24V	A A A	1.9 1.4 5.7 5.7
Operating current D0	C12	400V 500V 110V 24V 48V 60V 110V	A A A A	1.9 1.4 5.7 5.7 2.9 2.3 1.25
Operating current D0	C12	400V 500V 110V 24V 48V 60V 110V 125V	A A A A A A	1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1
Operating current D0	C12	400V 500V 110V 24V 48V 60V 110V 125V 220V	A A A A A A A	1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55
Operating current D0 Operating current D0	C12	400V 500V 110V 24V 48V 60V 110V 125V	A A A A A A	1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1
Operating current DO Operating current DO Operations	C12	400V 500V 110V 24V 48V 60V 110V 125V 220V	A A A A A A A	1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2
Operating current DO Operating current DO Operations Mechanical life	C12	400V 500V 110V 24V 48V 60V 110V 125V 220V	A A A A A A A A Cycles	1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2
Operating current DO Operating current DO Operations Mechanical life Electrical life	C12	400V 500V 110V 24V 48V 60V 110V 125V 220V	A A A A A A A	1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2
Operating current DO Operating current DO Operations Mechanical life Electrical life Safety related data	C12 C13	400V 500V 110V 24V 48V 60V 110V 125V 220V	A A A A A A A A Cycles	1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2
Operating current DO Operating current DO Operations Mechanical life Electrical life Safety related data	C12	400V 500V 110V 24V 48V 60V 110V 125V 220V 600V	A A A A A A A A Cycles cycles	1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 20000000
Operating current DO Operating current DO Operations Mechanical life Electrical life Safety related data	C12 C13 C13 C10d 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	1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 20000000 20000000
Operating current DO Operating current DO Operations Mechanical life Electrical life Safety related data Performance level B	C12 C13 C10d according to EN/ISO 13489-1	400V 500V 110V 24V 48V 60V 110V 125V 220V 600V	A A A A A A A A Cycles cycles	1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 20000000 20000000
	C12 C13 C13 C10d 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	1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1 0.55 0.2 20000000 20000000



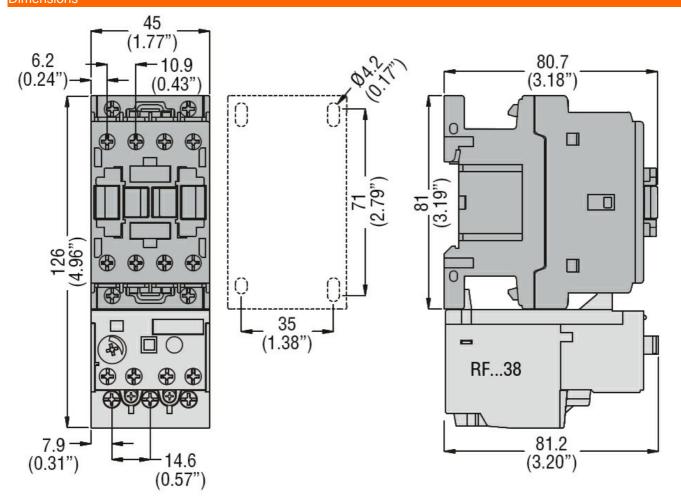


Rated AC voltage at 60Hz			V	230
AC operating voltage				
of 60Hz coil po	owered at 60Hz			
	pick-up		0/11	
		min	%Us	80
	des e sud	max	%Us	110
	drop-out		0/116	20
		min	%Us %Us	20 55
AC average coil consumption at 20°C		max	/005	33
	owered at 60Hz			
01 001 12 C011 pc	owered at 60112	in-rush	VA	75
		holding	VA	9
Dissipation at holding ≤20°C 50Hz		riolaling	W	2.5
Max cycles frequency			• • • • • • • • • • • • • • • • • • • •	2.0
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
	0	max	ms	28
	Opening NC			7
		min	ms	7
UL technical data		max	ms	18
Full-load current (FLA) for three-phase	AC motor			
i dil-load current (i LA) for three-phase	AC IIIotoi	at 480V	Α	11
		at 600V	A	11
Yielded mechanical performance		αι σου ν		
for single-phas	se AC motor			
ioi onigio priac		110/120V	HP	1
		230V	HP	2
for three-phase	e AC motor			
.sss phase		200/208V	HP	5
		220/230V	HP	5
		460/480V	HP	7.5
		575/600V	HP	10
General USE				
Contactor				
		AC current	Α	28
Auxiliary conta	cts			
		AC voltage	V	600
		AC current	Α	10
		DC voltage	V	250
		DC current	Α	1
Short-circuit protection fuse, 600V High fault				





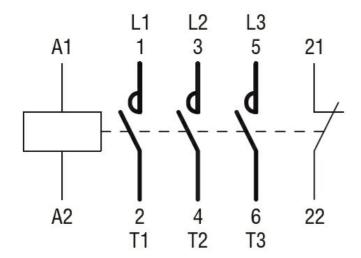
		Short circuit current	kA	100
		Fuse rating	Α	30
		Fuse class		J
	Standard fault			
		Short circuit current	kA	5
		Fuse rating	Α	70
Contact rating of auxilia	ary contacts according to UL			A600 - P600
Ambient conditions				
Temperature				
	Operating temperature			
		min	°C	-50
		max	°C	70
	Storage temperature			
		min	°C	-60
		max	°C	80
Max altitude			m	3000
Resistance & Protection	n			
Pollution degree				3
Dimensions				



Wiring diagrams

ENERGY AND AUTOMATION

THREE-POLE CONTACTOR, IEC OPERATING CURRENT IE (AC3) = 12A, AC COIL 60HZ, 230VAC, 1NC AUXILIARY CONTACT



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







Product designation Power contactor Product type designation BF12 Contact characteristics Nr. 3 Number of poles Rated insulation voltage Ui IEC/EN ٧ 690 k۷ Rated impulse withstand voltage Uimp 6 Operational frequency Нъ 25 min Hz 400 max IEC Conventional free air thermal current Ith 28 Α 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) 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 22 Α 22 48V Α 75V Α 20 110V 16





	220V	Α	11
IEC max current le in DC1 with L/R ≤ 1ms with 4 poles in series			
	≤24V	Α	20
	48V	Α	20
	75V	Α	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			
120 max sarronx to in 200 200 mar 27x = 10mb max 2 police in collect	≤24V	Α	15
	48V	Α	13
	75V	A	12
	110V	A	8
	220V	A	2
IEC max current le in DC3-DC5 with L/R ≤ 15ms with 3 poles in series	2201	^	
TEO MAX current le in DO3-DO3 with E/K > 13MS with 3 poles in series	-24 17	۸	10
	≤24V 48V	A	18
		A	18
	75V	A	15
	110V	A	12
	220V	Α	6
IEC max current le in DC3-DC5 with L/R ≤ 15ms with 4 poles in series		_	
	≤24V	Α	15
	48V	Α	15
	75V	Α	15
	110V	Α	16
	220V	Α	7
Short-time allowable current for 10s (IEC/EN60947-1)		Α	150
Protection fuse			
	gG (IEC)	Α	32
	aM (IEC)	Α	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)			
\	lth	W	2
	AC3	W	0.4
Tightening torque for terminals	7.00	••	U. .
	min	Nm	1.5
	max	Nm	1.8
	min	Ibin	1.1
		Ibin	1.5
Tightening torque for coil terminal	max	ווטו	1.0
rightening torque for contential		Nima	0.0
	min	Nm Nas	0.8
	max	Nm	1
	min	lbin	0.8





May number of wires	oimultan agualu agan agtabla	max	Ibin Nr.	0.74
Conductor section	simultaneously connectable		INF.	
Conductor Section	AWG/Kcmil			
	AWO/Remii	max		10
	Flexible w/o lug conductor section	Пах		10
	o.a.o. a.o.a.g concessor coolean	min	mm²	1
		max	mm²	6
	Flexible c/w lug conductor section			
		min	mm²	1
		max	mm²	4
	Flexible with insulated spade lug conductor section	ı		
		min	mm²	1
		max	mm²	4
Power terminal protect	ction according to IEC/EN 60529			IP20 when
Mechanical features	•			properly wired
Operating position				
Sperating position		normal		Vertical plan
		allowable		±30°
		anomasio		Screw / DIN rail
Fixing				35mm
Weight			g	368
Conductor section				
	AWG/kcmil conductor section			
		max		10
Auxiliary contact char	acteristics			
Thermal current Ith			A	10
IEC/EN 60947-5-1 de	esignation			A600 - P600
Operating current AC	15			
Operating current AC	15	230V	A	3
Operating current AC	15	400V	Α	3 1.9
Operating current AC				3
		400V 500V	A A	3 1.9 1.4
Operating current DC	12	400V	Α	3 1.9
Operating current DC	12	400V 500V 110V	A A	3 1.9 1.4 5.7
Operating current DC	12	400V 500V 110V 24V	A A A	3 1.9 1.4 5.7
Operating current DC	12	400V 500V 110V 24V 48V	A A A	3 1.9 1.4 5.7 5.7 2.9
Operating current DC	12	400V 500V 110V 24V 48V 60V	A A A	3 1.9 1.4 5.7 5.7 2.9 2.3
Operating current AC Operating current DC Operating current DC	12	400V 500V 110V 24V 48V	A A A A A	3 1.9 1.4 5.7 5.7 2.9
Operating current DC	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 DC	12	400V 500V 110V 24V 48V 60V 110V 125V	A A A A A A	3 1.9 1.4 5.7 5.7 2.9 2.3 1.25 1.1
Operating current DC Operating current DC	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 DC Operating current DC	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 DC Operating current DC Operations Mechanical life Electrical 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 DC Operating current DC Operations Mechanical life Electrical life Safety related data	13	400V 500V 110V 24V 48V 60V 110V 125V 220V	A 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 DC Operating current DC Operations Mechanical life Electrical life Safety related data	12	400V 500V 110V 24V 48V 60V 110V 125V 220V 600V	A 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 DC Operating current DC 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 20000000
Operating current DC Operating current DC Operations Mechanical life Electrical life Safety related data Performance level B1	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 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 DC Operating current DC Operations Mechanical life Electrical life Safety related data Performance level B1 Mirror contats accord	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 2000000 2000000 2000000 yes
Operating current DC Operating current DC Operations Mechanical life Electrical life Safety related data Performance level B1	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 20000000



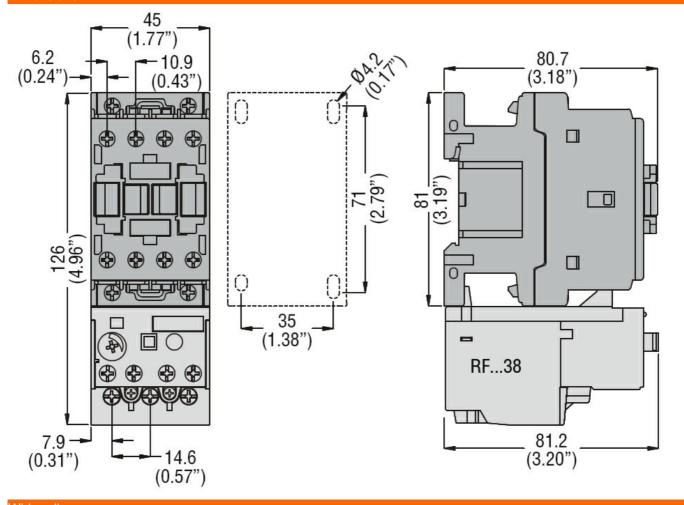


Rated AC voltage at 60Hz		V	460
AC operating voltage			
of 60Hz coil powered at 60Hz			
pick-up			
	min	%Us	80
	max	%Us	110
drop-out			
	min	%Us	20
	max	%Us	55
AC average coil consumption at 20°C			
of 60Hz coil powered at 60Hz			
	in-rush	VA	75
	holding	VA	9
Dissipation at holding ≤20°C 50Hz		W	2.5
Max cycles frequency			
Mechanical operation		cycles/h	3600
Operating times			
Average time for Us control			
in AC			
Closing NO			
Č	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	Α	11
	at 600V	Α	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	Α	28
Auxiliary contacts			
•	AC voltage	V	600
	AC current	Α	10
	DC voltage	V	250
	DC current	Α	1
Short-circuit protection fuse, 600V			
High fault			



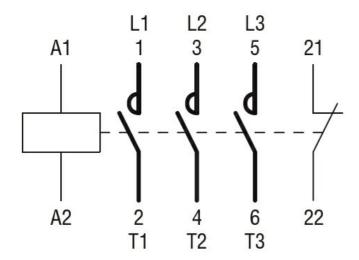


		Short circuit current	kA	100
		Fuse rating	Α	30
		Fuse class		J
Sta	ndard fault			
		Short circuit current	kA	5
		Fuse rating	Α	70
Contact rating of auxiliary co	ontacts according to UL			A600 - P600
Ambient conditions				
Temperature				
Ope	erating temperature			
		min	°C	-50
		max	°C	70
Sto	rage temperature			
		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







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	220V	Α	11
IEC max current le in DC1 with L/R ≤ 1ms with 4 poles in series			
	≤24V	Α	20
	48V	Α	20
	75V	Α	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	A	8
	220V	A	2
IEC max current le in DC3-DC5 with L/R ≤ 15ms with 3 poles in series	220 V		
index current le in 200-200 with E/TC = 15ms with 5 poles in series	≤24V	Α	18
	48V	A	18
	75V	A	15
	110V	A	12
IFC may current to in DC2 DC5 with L/D < 15mg with 4 malos in series	220V	A	6
IEC max current le in DC3-DC5 with L/R ≤ 15ms with 4 poles in series	~24) /	۸	4.5
	≤24V	A	15
	48V	A	15
	75V	A	15
	110V	A	16
OL 44: UL 11 40 (IEO/EN000474)	220V	A	7
Short-time allowable current for 10s (IEC/EN60947-1)		Α	150
Protection fuse	~C (IEC)	۸	20
	gG (IEC)	A	32
Malian and it (DMO at a)	aM (IEC)	A	12
Making capacity (RMS value)		Α	120
Breaking capacity at voltage	4.403.4		0.0
	440V	A	96
	500V	A	96
	690V	Α	94
Resistance per pole (average value)		mΩ	2.5
Power dissipation per pole (average value)			_
	Ith	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	Ibin	0.74
	s simultaneously connectable		Nr.	2
Conductor section	AMA O II Committee			
	AWG/Kcmil			10
	Florible w/s lug conductor coetion	max		10
	Flexible w/o lug conductor section	min	mm²	1
		max	mm²	6
	Flexible c/w lug conductor section	IIIax	111111	0
	rickible of wind contactor section	min	mm²	1
		max	mm²	4
	Flexible with insulated spade lug conductor section			`
	эр э	min	mm²	1
		max	mm²	4
Dower terminal prote	action according to IEC/EN 60520			IP20 when
Power terminal prote	ection according to IEC/EN 60529			properly wired
Mechanical features				
Operating position				
		normal		Vertical plan
		allowable		±30°
Fixing				Screw / DIN rail 35mm
Weight			g	348
Conductor section				
	AWG/kcmil conductor section			
		max		10
Auxiliary contact cha	aracteristics			
Thermal current Ith			Α	10
IEC/EN 60947-5-1 c				A600 - P600
Operating current A	C15			
		230V	Α	3
		400V	A	1.9
0	040	500V	Α	1.4
Operating current Do	C12	440)/	^	
O	040	110V	A	5.7
Operating current Do	UI3	0.417	۸	E 7
		24V 48V	A	5.7
		48 V 60 V	A A	2.9 2.3
		110V	A	2.3 1.25
		110V 125V	A	1.1
		220V	A	0.55
		600V	Α	0.2
Operations		,,,,,		
Mechanical life			cycles	20000000
			cycles	2000000
Electrical life				
Electrical life Safety related data				
Safety related data	310d according to EN/ISO 13489-1			
Safety related data	310d according to EN/ISO 13489-1	rated load	cycles	2000000
Safety related data	-	rated load nechanical load	cycles cycles	2000000 20000000
Safety related data Performance level E	-		-	
Safety related data Performance level E	m		-	20000000



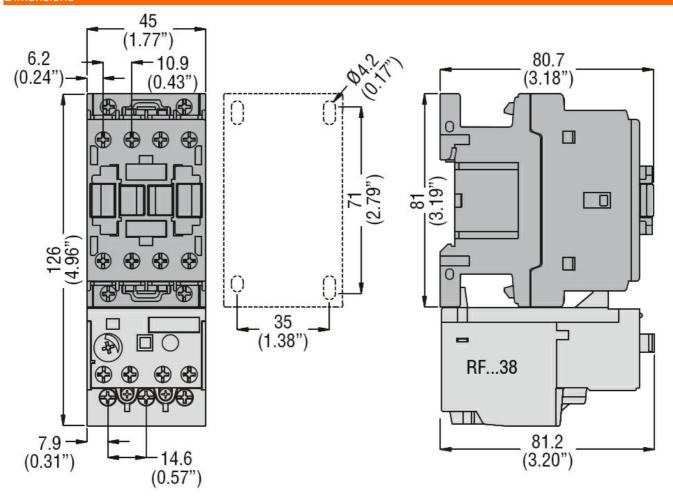


Rated AC voltage at 60	0Hz		V	575
AC operating voltage				
	of 60Hz coil powered at 60Hz			
	pick-up			
		min	%Us	80
		max	%Us	110
	drop-out	•	0/11-	00
		min	%Us	20
AC average coil consu	umption at 20°C	max	%Us	55
AC average con consu	·			
	of 60Hz coil powered at 60Hz	in-rush	VA	75
		holding	VA VA	9
Dissipation at holding :	<20°C 50Hz	Holding	W	2.5
Max cycles frequency	S20 C 30HZ		VV	2.0
Mechanical operation			cycles/h	3600
Operating times			Oyule3/11	
Average time for Us co	ontrol			
worde unic for 03 CC	in AC			
	Closing NO			
	Closing IVC	min	ms	8
		max	ms	24
	Opening NO			
	-1 3 -	min	ms	10
		max	ms	20
	Closing NC			
	Ţ	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	Α	11
		at 600V	Α	11
Yielded mechanical pe				
	for single-phase AC motor			
		110/120V	HP	1
		230V	HP	2
	for three-phase AC motor	000/0001	115	F
		200/208V	HP	5
		220/230V	HP	5
		460/480V	HP up	7.5
General USE		575/600V	HP	10
General USE	Contactor			
	Contactor	AC current	Α	28
	Auvilian/ contacts	AC current	Α	20
	Auxiliary contacts	AC voltage	\/	600
		AC voltage AC current	V A	10
		DC voltage	V	250
		DC voltage DC current	V A	250 1
Short-circuit protection	fuse 600V	DO CUITETIL		<u> </u>
Short official protection	High fault			
	i iigii iault			





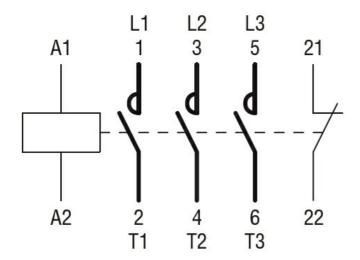
	Short circuit current	kA	100
	Fuse rating	Α	30
	Fuse class		J
Standard fault			·
	Short circuit current	kA	5
	Fuse rating	Α	70
Contact rating of auxiliary contacts according to UL			A600 - P600
Ambient conditions			
Temperature			
Operating temperature			
	min	°C	-50
	max	°C	70
Storage temperature			
	min	°C	-60
	max	°C	80
Max altitude		m	3000
Resistance & Protection			
Pollution degree			3
Dimensions			



Wiring diagrams

ENERGY AND AUTOMATION

THREE-POLE CONTACTOR, IEC OPERATING CURRENT IE (AC3) = 12A, AC COIL 60HZ, 575VAC, 1NC AUXILIARY CONTACT



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