





Number of poles  Rated insulation voltage Ui IEC/EN  Rated insulation voltage Uinp  V 690  Rated insulation voltage Uinp  V 60  Print Hz 25 max Hz 400  IEC Conventional frequency  Min Hz 25 max Hz 400  Rated Operational current leth  A 28  AC-1 (≤40°C) A 28  AC-1 (≤55°C) A 23  AC-1 (≤55°C) A 23  AC-1 (≤55°C) A 12  AC-3 (≤440∨ 55°C) A 12  AC-4 (400∨) A 7.9  Rated operational power AC-3 (T≤55°C)  230V kW 3.2  400V kW 5.7  415V kW 6.2  400V kW 6.2  500V kW 10  Rated operational power AC-1 (T≤40°C)  Rated operational power AC-1 (T≤40°C)  230V kW 10  400V kW 18  500V 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 22	Product designation			Power contactor
Number of poles         Nr.         3           Rated insulation voltage Uir IEC/EN         V         690           Operational frequency         min         Hz         25           Rated impulse withstand voltage Uimp         min         Hz         25           Rated impulse withstand voltage Uimp         min         Hz         25           Max         Hz         400         Max         400           IEC Conventional free air thermal current lith         A         28         28           Operational current le         AC-1 (≤40°C)         A         28           AC-1 (55°C)         A         23         AC-1 (≤70°C)         A         20           AC-3 (5400 y 55°C)         A         12         AC-4 (4000)         A         7.9         AC-3 (5400 y 55°C)         A         12         AC-4 (4000)         A         7.9         AC-3 (5400 y 55°C)         A         12         AC-4 (4000)         A         7.9         AC-3 (5400 y 55°C)         A         12         AC-4 (4000 y 60°C)         A         7.5         AC-4 (4000 y 60°C)         AC-3 (5400	Product type designation			BF12
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         A         28           Operational current Ie         AC-1 (≤40°C)         A         28           AC-1 (≤55°C)         A         23         AC-1 (≤70°C)         A         20           AC-3 (≤440V ≤55°C)         A         12         AC-4 (400V)         A         7.9           Rated operational power AC-3 (T≤55°C)         230V         kW         3.2         400V         kW         5.7           415V         kW         6.2         440V         kW         6.2         440V         kW         6.2           440V         kW         6.2         500V         kW         1.5         500V         kW         1.8           500V         kW         1.0         400V         kW         1.8         500V         kW         1.8         500V         kW         2.2         400V         kW         1.8         500V         kW         2.2         400V         kW				
Rated impulse withstand voltage Uimp				
Operational frequency         min max Hz max         Hz but with 1 poles in series           IEC Conventional free air thermal current lth         A 28           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 A15V kW 6.2 A40V kW 5.7 A15V kW 6.2 A40V kW 7.5 A40V kW 10 A40V kW 18 A40V kW 10 A40V kW 18 A40V kW 1				
Min			kV	6
EC Conventional free air thermal current lth	Operational frequency			
IEC Conventional free air thermal current lth				
Operational current le       AC-1 (≤40°C) A 23 AC-1 (≤70°C) A 20 AC-1 (≤70°C) A 20 AC-1 (≤70°C) A 20 AC-1 (≤70°C) A 12 AC-4 (400V) A 7.9         Rated operational power AC-3 (T≤55°C)       230V kW 3.2 AC-4 (400V) kW 5.7 A15V kW 6.2 A15V kW 10 A15V kW		max		
AC-1 (≤40°C) A 28 AC-1 (≤55°C) A 23 AC-1 (≤70°C) A 20 AC-3 (≤440V ≤55°C) A 12 AC-4 (400V) A 7.9  Rated operational power AC-3 (T≤55°C)  230V kW 3.2 400V kW 5.7 415V kW 6.2 440V kW 6.2 500V kW 7.5 690V kW 10  Rated operational power AC-1 (T≤40°C)  230V kW 10  Rated operational power AC-1 (T≤40°C)  230V kW 10  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 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 75V A 18 110V A 13 220V A 1  IEC max current le in DC1 with L/R ≤ 1ms with 3 poles in series			Α	28
AC-1 (≤55°C) A 23 AC-1 (≤70°C) A 20 AC-3 (≤440V ≤55°C) A 12 AC-4 (400V) A 7.9  Rated operational power AC-3 (T≤55°C)  230V kW 3.2 400V kW 5.7 415V kW 6.2 440V kW 6.2 500V kW 10  Rated operational power AC-1 (T≤40°C)  230V kW 10  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 10 110V A 13 220V A 1  IEC max current le in DC1 with L/R ≤ 1ms with 3 poles in series	Operational current le			
AC-1 (≤70°C) A 20 AC-3 (≤440V ≤55°C) A 12 AC-4 (400V) A 7.9  Rated operational power AC-3 (T≤55°C)  230V kW 3.2 400V kW 5.7 4115V kW 6.2 440V kW 6.2 500V kW 7.5 690V kW 10  Rated operational power AC-1 (T≤40°C)  230V kW 10  Rated operational power AC-1 (T≤40°C)  230V kW 10  230V kW 10  230V kW 10  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  IEC max current le in DC1 with L/R ≤ 1ms with 3 poles in series		,		
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 6.2 500V kW 7.5 690V kW 10  Rated operational power AC-1 (T≤40°C)  230V kW 10  Rated operational power AC-1 (T≤40°C)  230V kW 10  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  IEC max current le in DC1 with L/R ≤ 1ms with 3 poles in series		,		
AC-4 (400V)				
Rated operational power AC-3 (T≤55°C)  230V kW 3.2 400V kW 5.7 415V kW 6.2 440V kW 6.2 500V kW 7.5 690V kW 10  Rated operational power AC-1 (T≤40°C)  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		•		
230V   kW   3.2   400V   kW   5.7   415V   kW   6.2   440V   kW   6.2   500V   kW   7.5   690V   kW   10   10   10   10   10   10   10   1		AC-4 (400V)	Α	7.9
400V   kW   5.7   415V   kW   6.2   440V   kW   6.2   440V   kW   6.2   500V   kW   7.5   690V   kW   10   10   10   10   10   10   10   1	Rated operational power AC-3 (T≤55°C)			
415V   kW   6.2   440V   kW   6.2   500V   kW   7.5   690V   kW   10				
A440V   kW   6.2   500V   kW   7.5   690V   kW   10				
Soov   kW   7.5   690V   kW   10				
Rated operational power AC-1 (T≤40°C)   230V   kW   10   400V   kW   18   500V   kW   23   690V   kW   32     32     32				
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 75V A 18 110V A 13 220V A 1				
230V   kW   10   400V   kW   18   500V   kW   23   690V   kW   32		690V	kW	
400V   kW   18   500V   kW   23   690V   kW   32	Rated operational power AC-1 (T≤40°C)			
500V   kW   23   690V   kW   32				
EC 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   −				
Section   Sec				
≤24V		690V	kVV	32
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	IEC max current le in DC1 with L/R ≤ 1ms with 1 poles in series			
75V   A   13   110V   A   6   220V   A   -				
110V				
EC max current le in DC1 with L/R ≤ 1ms with 2 poles in series   ≤24V				
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 22 48V A 22 75V A 20				6
	150 11 : BO4 : 11 L/B 44 : 11 0 1 : : :	220V	А	_
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 22 48V A 22 75V A 20	IEC max current le in DC1 with L/R ≤ 1ms with 2 poles in series		_	
220V A 1   IEC max current le in DC1 with L/R ≤ 1ms with 3 poles in series   ≤24V A 22   48V A 22   75V A 20				
IEC max current le in DC1 with L/R ≤ 1ms with 3 poles in series  ≤24V A 22  48V A 22  75V A 20				
≤24V A 22 48V A 22 75V A 20	150	220V	Α	
48V A 22 75V A 20	IEC max current le in DC1 with L/R ≤ 1ms with 3 poles in series			22
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				
	≤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		<u> </u>		
	≤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	220 V			
	≤24V	Α	15	
	48V	A	15	
	75V	Α	15	
	110V	Α	16	
	220V	A	7	
Short-time allowable current for 10s (IEC/EN60947-1)			150	
Protection fuse				
	gG (IEC)	Α	32	
	aM (IEC)	Α	12	
Making capacity (RMS value)	am (ILO)	A	120	
Breaking capacity at voltage			. = 3	
	440V	Α	96	
	500V	A	96	
	690V	A	94	
Resistance per pole (average value)	030 V	mΩ	2.5	
Power dissipation per pole (average value)		11122	۷.0	
1 ower dissipation per pole (average value)	Ith	W	2	
	AC-3	W	0.4	
Tightening torque for terminals	70-3	V V	U. <del>T</del>	
righterning torque for terminals	min	Nm	1.5	
	max	Nm	1.8	
	min	Ibin	1.0	
		Ibin	1.1	
Tightening torque for coil terminal	max	וווטו	1.0	
rightering torque for conferminal	min	Nlm	0.8	
	min	Nm Nm	0.8	
	max	Nm	1	
	min	Ibin	0.8	





		max	Ibin	0.74
	simultaneously connectable		Nr.	2
Conductor section	AMA #4 . 11			
	AWG/Kcmil			10
	Flexible w/o lug conductor section	max		10
	Flexible w/o lug colludctor section	min	mm²	1
		max	mm²	6
	Flexible c/w lug conductor section	max		
	r textilite of thing contaction occurrent	min	mm²	1
		max	mm²	4
	Flexible with insulated spade lug conductor section			
	, ,	min	mm²	1
		max	mm²	4
Power terminal protect	ction according to IEC/EN 60520			IP20 when
	ction according to IEC/EN 60529			properly wired
Mechanical features				
Operating position				
		normal		Vertical plan
		allowable		±30°
Fixing				Screw / DIN rail
				35mm
Weight			g	500
Conductor section	ANAC/kamil aandustaraastian			
	AWG/kcmil conductor section	may		10
Auxiliary contact char	actoristics	max		10
	actoristics		А	10
i nermai current ith			_	117
Thermal current Ith IEC/EN 60947-5-1 de	esignation		^	
IEC/EN 60947-5-1 de	<del>-</del>		A	A600 - P600
	<del>-</del>	230V	A	A600 - P600
IEC/EN 60947-5-1 de	<del>-</del>	230V 400V		
IEC/EN 60947-5-1 de	<del>-</del>		A	A600 - P600 3
IEC/EN 60947-5-1 de	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	A600 - P600 3 1.9 1.4
Operating current DC	15	400V 500V 110V 24V	A A A	A600 - P600 3 1.9 1.4 5.7
Operating current AC	15	400V 500V 110V 24V 48V	A A A	A600 - P600  3 1.9 1.4  5.7  5.7 2.9
Operating current AC	15	400V 500V 110V 24V 48V 60V	A A A	A600 - P600  3 1.9 1.4  5.7  5.7 2.9 2.3
Operating current DC	15	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	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
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
Operating current DC 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
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 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 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 Safety related data	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
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	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 BC 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	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 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





## THREE-POLE CONTACTOR, IEC OPERATING CURRENT IE (AC3) = 12A, DC COIL LOW CONSUMPTION, 48VDC, 1NO AUXILIARY CONTACT

### AC operating voltage

of 50/60Hz coil powered at 50Hz drop-out

	arop-out		0/11-	
DO sail an anation		max	%Us	55
DC coil operating				10
DC rated control voltage			V	48
DC operating voltage				
pick-	ир		0/11	
		min	%Us	80
		max	%Us	110
drop	-out			
		min	%Us	10
		max	%Us	40
Average coil consumption ≤2	20°C			
		in-rush	W	2.4
		holding	W	2.4
Max cycles frequency				
Mechanical operation			cycles/h	3600
Operating times				
Average time for Us control				
in AC				
	Closing NO			
	-	min	ms	8
		max	ms	24
	Opening NO			
	· -	min	ms	10
		max	ms	20
	Closing NC			
	· ·	min	ms	14
		max	ms	28
	Opening NC			
	1 3	min	ms	7
		max	ms	18
in DC	2			
2	Closing NO			
	5.55m.g 5	min	ms	75
		max	ms	91
	Opening NO	max	5	J.
	Sporming 140	min	ms	15
		max	ms	19
UL technical data		THAX	5	. 0
Full-load current (FLA) for thr	ree-phase AC motor			
. a load darrotte (i Erry for till	oo phaoo no motor	at 480V	Α	11
		at 600V	A	11
Yielded mechanical performa	ance	at 000 v		
	ingle-phase AC motor			
ioi si	mgie-priase AC motor	110/120V	HP	1
				1
f 41-	area phase AC motor	230V	HP	2
for th	ree-phase AC motor	000/0001/	110	_
		200/208V	HP	5
		220/230V	HP	5
		460/480V	HP	7.5
		575/600V	HP	10
General USE				

BF1210L048

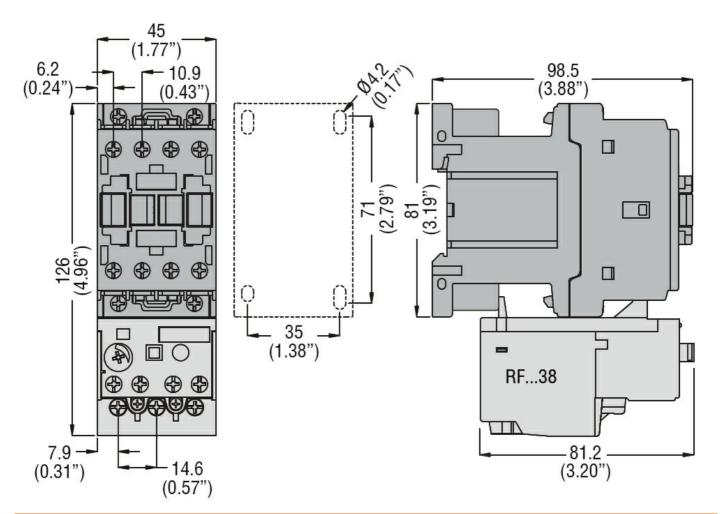




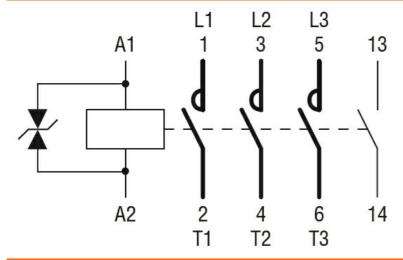
	Contactor			
		AC current	Α	28
	Auxiliary contacts			
		AC voltage	V	600
		AC current	Α	10
		DC voltage	V	250
		DC current	Α	1
Short-circuit protection	on fuse, 600V			
	High fault			
		Short circuit current	kA	100
		Fuse rating	Α	30
		Fuse class		J
	Standard fault			
		Short circuit current	kA	5
		Fuse rating	Α	70
Contact rating of 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 & Protect	tion			
Pollution degree				3
Dimensions				

**ENERGY AND AUTOMATION** 

## THREE-POLE CONTACTOR, IEC OPERATING CURRENT IE (AC3) = 12A, DC COIL LOW CONSUMPTION, 48VDC, 1NO 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



## BF1210L048

THREE-POLE CONTACTOR, IEC OPERATING CURRENT IE (AC3) = 12A, DC COIL LOW CONSUMPTION, 48VDC, 1NO AUXILIARY CONTACT

CCC	
cULus	
EAC	

ETIM classification

ETIM 8.0

EC000066 -Power contactor, AC switching