### electric THREE-POLE CONTACTOR, IEC OPERATING CURRENT IE (AC3) = 9A, DC COIL, 12VDC, 1NO

**AUXILIARY CONTACT ENERGY AND AUTOMATION** 



Series	Product designation			Power contactor
Number of poles	Product type designation			BF09
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         25           Operational current Ie         AC-1 (≤40°C)         A         25           AC-1 (≤55°C)         A         20         AC-1 (≤55°C)         A         9           AC-3 (≤440v ≤55°C)         A         9         AC-4 (400v)         A         4.9           Rated operational power AC-3 (T≤55°C)         230V         kW         2.2         4.0         kW         4.9           Rated operational power AC-3 (T≤55°C)         230V         kW         4.5         4.0         kW         4.5         4.0         4.0         kW         4.5         4.0         kW         4.5         4.0         kW         4.5         4.0         kW         4.5         4.0         kW         7.5         5.0         6.0         kW         7.5         5.0         6.0         kW         7.5         5.0         6.0         kW         7.5         7.5         4.0         kW         4.0         kW         7.5         4.0         4.0			Nir	2
Rated impulse withstand voltage Uimp				
Operational frequency         min max Hz				
Min	·		N.V.	0
EC Conventional free air thermal current Ith	Operational frequency	min	LJ	25
EC Conventional free air thermal current lth				
Operational current le         AC-1 (≤40°C)       A       25         AC-1 (≤55°C)       A       20         AC-1 (≤70°C)       A       18         AC-3 (≤440V ≤55°C)       A       9         AC-4 (400V)       A       4.9         Rated operational power AC-3 (T≤55°C)         230V       kW       2.2         400V       kW       4.2         440V       kW       4.5         440V       kW       4.8         500V       kW       5.5         690V       kW       7.5         Rated operational power AC-1 (T≤40°C)         230V       kW       9.5         400V       kW       16         500V       kW       2.5         400V       kW       16         500V       kW       2.1         690V       kW       2.7         IEC max current le in DC1 with L/R ≤ 1ms with 2 poles in series         ≤24V       A       18         48V       A       18         48V       A       17         110V       A       12         220V       A <td>IEC Conventional free air thermal current Ith</td> <td>IIIdX</td> <td></td> <td></td>	IEC Conventional free air thermal current Ith	IIIdX		
AC-1 (≤40°C)			A	23
AC-1 (≤55°C)	Operational current le	AC 1 (<10°C)	۸	25
AC-1 (≤70°C)				
AC-3 (≤440V ≤55°C) A 9 AC-4 (400V) A 4.9  Rated operational power AC-3 (T≤55°C)  230V kW 2.2 400V kW 4.2 415V kW 4.5 440V kW 4.8 500V kW 5.5 690V kW 7.5  Rated operational power AC-1 (T≤40°C)  230V kW 9.5 690V kW 7.5  Rated operational power AC-1 (T≤40°C)  230V kW 9.5 400V kW 21 690V kW 21 690V kW 27  IEC max current le in DC1 with L/R ≤ 1ms with 1 poles in series  ≤24V A 15 48V A 13 75V A 12 110V A 6 220V A -  IEC max current le in DC1 with L/R ≤ 1ms with 2 poles in series  ≤24V A 18 48V A 18 75V A 17 110V A 6 220V A 17 110V A 12 220V A 1		` ,		
Rated operational power AC-3 (T≤55°C)   230V   kW   2.2   400V   kW   4.2   415V   kW   4.5   440V   kW   4.8   500V   kW   5.5   690V		` ,		
Rated operational power AC-3 (T≤55°C)  230V kW 2.2 400V kW 4.5 415V kW 4.5 440V kW 4.8 500V kW 5.5 690V kW 7.5  Rated operational power AC-1 (T≤40°C)  230V kW 9.5 690V kW 16 500V kW 21 690V kW 27  IEC max current le in DC1 with L/R ≤ 1ms with 1 poles in series  ≤24V A 15 48V A 13 75V A 12 110V A 6 220V A -  IEC max current le in DC1 with L/R ≤ 1ms with 2 poles in series  ≤24V A 18 48V A 18 48V A 18 48V A 18 48V A 18 17 110V A 18 48V A 18 17 110V A 12 220V A 1		•		
230V   kW   2.2   440V   kW   4.2   415V   kW   4.5   440V   kW   4.5   440V   kW   4.8   500V   kW   5.5   690V   kW   7.5	Data de constitue de como AO 2 /T/FF90)	AC-4 (400V)	Α	4.9
A00V   kW   4.2     415V   kW   4.5     440V   kW   4.8     440V   kW   4.8     500V   kW   5.5     690V   kW   7.5     Rated operational power AC-1 (T≤40°C)     230V   kW   9.5     400V   kW   16     500V   kW   21     690V   kW   27     IEC max current le in DC1 with L/R ≤ 1ms with 1 poles in series     524V   A   15     48V   A   13     75V   A   12     110V   A   6     220V   A   -     IEC max current le in DC1 with L/R ≤ 1ms with 2 poles in series     524V   A   18     48V   A   18     48V   A   18     75V   A   17     110V   A   12     220V   A   1     IEC max current le in DC1 with L/R ≤ 1ms with 3 poles in series     524V   A   18     75V   A   17     110V   A   12     220V   A   1     IEC max current le in DC1 with L/R ≤ 1ms with 3 poles in series     524V   A   20     48V   A   20     48V   A   20     75V   A   20	Rated operational power AC-3 (1 \le 55 \cdot C)	0001/	1.147	0.0
415V kW 4.5				
A440V   kW   4.8   500V   kW   5.5   690V   kW   7.5				
Soov   kW   5.5   690V   kW   7.5				
Rated operational power AC-1 (T≤40°C)   230V   kW   9.5   400V   kW   16   500V   kW   21   690V   kW   27     27				
Rated operational power AC-1 (T≤40°C)  230V kW 9.5 400V kW 16 500V kW 21 690V kW 27  IEC max current le in DC1 with L/R ≤ 1ms with 1 poles in series  ≤24V A 15 48V A 13 75V A 12 110V A 6 220V A -  IEC max current le in DC1 with L/R ≤ 1ms with 2 poles in series  ≤24V A 18 48V A 18 75V A 12 110V A 18 48V A 18 75V A 17 110V A 18 110V A 12 220V A 1  IEC max current le in DC1 with L/R ≤ 1ms with 3 poles in series  ≤24V A 20 48V A 20 48V A 20 75V A 20				
	D. J.	690V	KVV	7.5
A00V   kW   16   500V   kW   21   690V   kW   27     27	Rated operational power AC-1 (T≤40°C)	0001/		
Soov   kW   21   690V   kW   27				
EC max current le in DC1 with L/R ≤ 1ms with 1 poles in series   S24V   A   15				
Section   Sec				
		690V	KVV	27
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	IEC max current le in DC1 with L/R ≤ 1ms with 1 poles in series		_	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$				
110V   A   6   220V   A   -				
EC max current le in DC1 with L/R $\leq$ 1ms with 2 poles in series   $\leq$ 24V   A   18   48V   A   18   75V   A   17   110V   A   12   220V   A   1   10V   A   20   24V   A   20   20V   A   20V   20V   20V   A   20V   2				
IEC max current le in DC1 with L/R ≤ 1ms with 2 poles in series   ≤24V				6
	150 H. J. D. M. J. D. J.	220V	A	_
	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 20 \\ 48V \qquad A \qquad 20 \\ 75V \qquad A \qquad 20 $				
≤24V A 20 48V A 20 75V A 20		220V	Α	1
48V A 20 75V A 20	IEC max current le in DC1 with L/R ≤ 1ms with 3 poles in series		_	
75V A 20				
110V A 15				
		110V	Α	15



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	220V	Α	10
IEC max current le in DC1 with L/R ≤ 1ms with 4 poles in series	220 V		10
120 max outfort to in 201 with E/T = 1110 with 4 poles in selles	≤24V	Α	20
	48V	A	20
	75V	A	20
	110V	Α	16
	220V	Α	12
IEC max current le in DC3-DC5 with L/R ≤ 15ms with 1 poles in series			
	≤24V	Α	10
	48V	Α	9
	75V	Α	8
	110V	Α	2
	220V	Α	_
IEC max current le in DC3-DC5 with L/R ≤ 15ms with 2 poles in series			
	≤24V	Α	13
	48V	Α	11
	75V	Α	10
	110V	Α	7
	220V	Α	2
IEC max current le in DC3-DC5 with L/R ≤ 15ms with 3 poles in series			
	≤24V	Α	15
	48V	Α	15
	75V	Α	13
	110V	Α	11
	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	12
	220V	Α	7
Short-time allowable current for 10s (IEC/EN60947-1)		Α	150
Protection fuse			
	gG (IEC)	Α	25
	aM (IEC)	Α	10
Making capacity (RMS value)		Α	90
Breaking capacity at voltage			
	440V	Α	72
	500V	Α	72
	690V	Α	71
Resistance per pole (average value)		mΩ	2.5
Power dissipation per pole (average value)			
· · · · · · · · · · · · · · · · · · ·	Ith	W	1.6
	AC-3	W	0.2
Tightening torque for terminals			
	min	Nm	1.5
	max	Nm	1.8
	min	Ibin	1.1
	max	Ibin	1.5
Tightening torque for coil terminal			_
	min	Nm	0.8
	max	Nm	1
	min	Ibin	0.8



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		max	lbin	0.74
	s simultaneously connectable		Nr.	2
Conductor section				
	AWG/Kcmil			
		max		10
	Flexible w/o lug conductor section	_		
		min	mm²	1
		max	mm²	6
	Flexible c/w lug conductor section		2	
		min	mm²	1
	<del></del>	max	mm²	4
	Flexible with insulated spade lug conductor section		2	4
		min	mm²	1
		max	mm²	4 IP20 when
Power terminal prote	ection according to IEC/EN 60529			properly wired
Mechanical features				properly wired
Operating position				
Crotating position		normal		Vertical plan
		allowable		±30°
		anowabio		Screw / DIN rail
Fixing				35mm
Weight			g	492
Conductor section				
	AWG/kcmil conductor section			
		max		10
Auxiliary contact cha	racteristics			
Thermal current Ith			Α	10
IEC/EN 60947-5-1 d	esignation			A600 - P600
Operating current AC	215			
		230V	Α	3
		400V	Α	1.9
		500V	Α	1.4
Operating current DO	C12			
		110V	Α	5.7
Operating current DO	D13			
Operating current be				E 7
Operating current Do		24V	Α	5.7
Operating current Do		24V 48V	A A	2.9
Operating current De				
Operating current De		48V	Α	2.9
Operating current De		48V 60V	A A	2.9 2.3
Operating current Do		48V 60V 110V	A A A	2.9 2.3 1.25
Operating current De		48V 60V 110V 125V	A A A	2.9 2.3 1.25 1.1
		48V 60V 110V 125V 220V	A A A A	2.9 2.3 1.25 1.1 0.55
Operations		48V 60V 110V 125V 220V	A A A A	2.9 2.3 1.25 1.1 0.55
Operations Mechanical life		48V 60V 110V 125V 220V	A A A A	2.9 2.3 1.25 1.1 0.55 0.2
Operations  Mechanical life  Electrical life  Safety related data		48V 60V 110V 125V 220V	A A A A A cycles	2.9 2.3 1.25 1.1 0.55 0.2
Operations Mechanical life Electrical life Safety related data	.10d according to EN/ISO 13489-1	48V 60V 110V 125V 220V	A A A A A cycles	2.9 2.3 1.25 1.1 0.55 0.2
Operations Mechanical life Electrical life Safety related data	10d according to EN/ISO 13489-1	48V 60V 110V 125V 220V	A A A A A cycles	2.9 2.3 1.25 1.1 0.55 0.2
Operations Mechanical life Electrical life Safety related data	-	48V 60V 110V 125V 220V 600V	A A A A A Cycles cycles	2.9 2.3 1.25 1.1 0.55 0.2 20000000 2000000
Operations Mechanical life Electrical life Safety related data Performance level B	med	48V 60V 110V 125V 220V 600V	A A A A A Cycles	2.9 2.3 1.25 1.1 0.55 0.2 20000000 20000000 20000000 200000000
Operations Mechanical life Electrical life Safety related data Performance level B	-	48V 60V 110V 125V 220V 600V	A A A A A Cycles cycles	2.9 2.3 1.25 1.1 0.55 0.2 20000000 20000000



## electric THREE-POLE CONTACTOR, IEC OPERATING CURRENT IE (AC3) = 9A, DC COIL, 12VDC, 1NO AUXILIARY CONTACT

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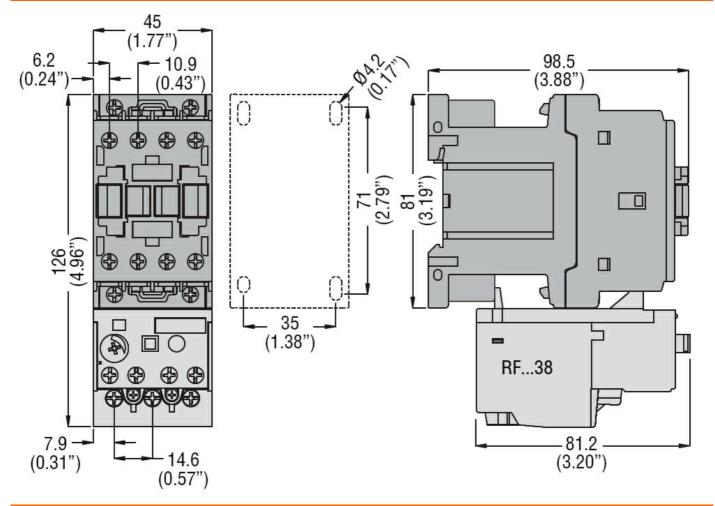
DC rated control vo	oltage			V	12
DC operating voltag	ge				
	pick-up				
			min	%Us	70
			max	%Us	125
	drop-out		_		
			min	%Us	10
<del> </del>			max	%Us	40
Average coil consu	mption ≤20°C			10.	
			in-rush	W	5.4
			holding	W	5.4
Max cycles frequen				1 "	0000
Mechanical operation	on			cycles/h	3600
Operating times	( 1				
Average time for Us					
	in AC	Olaska NO			
		Closing NO	<b>*</b> -	,	0
			min	ms	8
		Opening NO	max	ms	24
		Opening NO		ma	10
			min	ms	10 20
		Closing NC	max	ms	20
		Closing NC	min	me	14
			max	ms ms	28
		Opening NC	IIIax	1115	20
		Opening NC	min	ms	7
			max	ms	, 18
	in DC		Пах	1110	10
	111 00	Closing NO			
		Closing IVC	min	ms	54
			max	ms	66
		Opening NO	max	1110	
		opoliing 110	min	ms	14
			max	ms	17
UL technical data					
	LA) for three-phase	AC motor			
(	,		at 480V	Α	7.6
			at 600V	A	0.375
Yielded mechanical	l performance				
	for single-phas	e AC motor			
	Terrendie produ		110/120V	HP	0.75
			230V	HP	2
	for three-phase	e AC motor			
			200/208V	HP	3
			220/230V	HP	3
			460/480V	HP	5
			575/600V	HP	7.5
General USE					
	Contactor				
			AC current	Α	25
	Auxiliary contact	cts			
	,		40 4		600
			AC voltage	V	600



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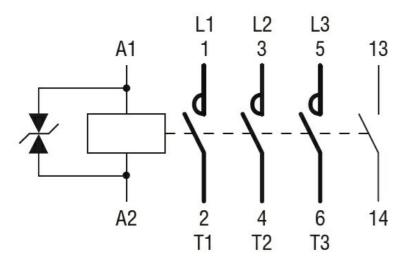
		DC voltage	V	250
		DC current	Α	1
Short-circuit protect	ion fuse, 600V			
	High fault			
		Short circuit current	kA	100
		Fuse rating	Α	30
		Fuse class		J
	Standard fault			
		Short circuit current	kA	5
		Fuse rating	Α	60
Contact rating of au	xiliary contacts according to UL			A600 - P600
Ambient conditions				
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				



Wiring diagrams

electric THREE-POLE CONTACTOR, IEC OPERATING CURRENT IE (AC3) = 9A, DC COIL, 12VDC, 1NO AUXILIARY CONTACT

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#### 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