



Contact characteristics           Number of poles         Nr.         3           Rated insulation voltage Ui IEC/EN         V         690           Rated insulation voltage Uimp         kV         6           Operational frequency         min         Hz         25           max         Hz         400         400           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 (≤440∨ ≤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         500V         kW         1.0         40V         kW         6.2           500V         kW         10         40V         kW         1.0         40V	Product designation Product type designation			Power contactor BF12
Number of poles         Nr.         3           Rated insulation voltage Ui IEC/EN         V         690           Rated insulation voltage Uimp         kV         6           Operational frequency         min         Hz         25           max         Hž         400         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 (57°C)         A         23           AC-1 (57°C)         A         20         AC-3 (5400V 55°C)         A         23         AC-1 (57°C)         A         20           AC-3 (5400V 55°C)         A         23         AC-1 (57°C)         A         20         AC-3 (5400V 55°C)         A         22         AC-4 (400V)         A         7.9         AC-3 (5400V 55°C)         A         23         AC-1 (55°C)         A         23         AC-1 (55°C)         A         23         AC-1 (55°C)         A         20         AC-3 (5400V 55°C)         A         23         AC-1 (55°C)         A         20         AC-3 (540V 56°C)         A         20         AC-3 (540V 56°C)         AC-2 (50°C)         AC-2 (50°C)	T, T			DI 12
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 (≤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         4.15V         kW         5.7           415V         kW         5.7         4.15V         kW         6.2         5.00V         kW         7.5         6.90V         kW         1.0         6.2         6.00V         kW         7.5         6.2         6.00V         kW         1.0         6.2         6.00V         kW         1.0         6.2         6.00V         kW         1.0         6.2         6.00V         kW         1.0         6.0         2.0         kW         1.0         6.0         2.0         kW         1.0         4.0         2.0         kW         1.			Nr	3
Rated impulse withstand voltage Uimp				
Operational frequency         min max by max         Hz hz hz         25 max           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 (≤4400 ≤55°C) A 12 AC-4 (4000) 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 A40V kW 7.5 A40V kW				
Min				
EC Conventional free air thermal current lth	operational modulonoy	min	Hz	25
EC Conventional free air thermal current lth				
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       3.2         400V       kW       5.7         415V       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         440V       kW       10       40V       kW       10         440V       kW       10       40V       kW       10         440V       kW       10       40V       kW       13         500V       kW       23       22       24V       A       17         48V       A       15       75V       A       13         110V       A       6       220V       A       -         110V       A       6	IEC Conventional free air thermal current Ith	max		
AC-1 (≤40°C)				
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     A400V   kW   18     500V   kW   23     690V   kW   32     IEC max current le in DC1 with L/R ≤ 1ms with 1 poles in series     524V   A   17     48V   A   15     75V   A   13     110V   A   6     220V   A   7     AV   A   20     48V   A   20     75V   A   18     110V   A   6     220V   A   1     IEC max current le in DC1 with L/R ≤ 1ms with 3 poles in series     524V   A   20     48V   A   20     75V   A   18     110V   A   6     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     48V   A   20     48V   A   22     75V   A   20     48V   A   22     48V   A   20     48V   A   22     48V   A   20     48V   A   20     48V   A   20     48V   A   20     48		AC-1 (≤40°C)	Α	28
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 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)  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 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   7.5   690V   kW   18   500V   kW   23   690V   kW   32   7.5	Rated operational power AC-3 (T≤55°C)	- ( /		
400V   kW   5.7   415V   kW   6.2   440V   kW   6.2   440V   kW   6.2   500V   kW   7.5   690V   kW   10	1 1 2 2 ( 2 2 2 )	230V	kW	3.2
415V   kW   6.2   440V   kW   6.2   500V   kW   7.5   690V   kW   10				
A40V   kW   6.2   500V   kW   7.5   690V   kW   10				
Soov   kW   7.5				
Rated operational power AC-1 (T≤40°C)   230V   kW   10   400V   kW   18   500V   kW   23   690V   kW   32   2   24V   A   15   75V   A   13   110V   A   6   220V   A   20   48V   A   20   75V   A   13   110V   A   13   110V   A   13   110V   A   13   110V   A   15   110V   A   10V				
	Rated operational power AC-1 (T≤40°C)			
400V   kW   18   500V   kW   23   690V   kW   32	,	230V	kW	10
S00V   kW   23   690V   kW   32		400V	kW	18
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  IEC max current le in DC1 with L/R ≤ 1ms with 3 poles in series		500V	kW	
		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   -		≤24V	Α	17
110V   A   6   220V   A   -		48V	Α	15
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		75V	Α	13
Section   Sec		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
IEC max current le in DC1 with L/R ≤ 1ms with 3 poles in series  ≤24V A 22  48V A 22  75V A 20		110V	Α	13
≤24V A 22 48V A 22 75V A 20		220V	Α	1
48V A 22 75V A 20	IEC max current le in DC1 with L/R ≤ 1ms with 3 poles in series	<del></del>		
75V A 20		≤24V	Α	22
		48V	Α	22
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	220 V		
The max current le in boo-boo with bit 2 forms with 2 poles in series	≤24V	Α	15
	48V	A	13
	46 V 75 V		13
		A	
	110V	A	8
150	220V	A	2
IEC max current le in DC3-DC5 with L/R ≤ 15ms with 3 poles in series	.= :		4.0
	≤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			
	≤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			
J. Safe stand of the stands	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.ن
Power dissipation per pole (average value)	141	147	2
	Ith	W	2
Till to die teen et te teen de	AC-3	W	0.4
Tightening torque for terminals			4 =
	min	Nm	1.5
	max	Nm	1.8
	min	Ibin	1.1
	max	lbin	1.5
Tightening torque for coil terminal			
	min	Nm	0.8
	max	Nm	1
	min	Ibin	0.8



Maria de la contracta de la co	day to the second second to	max	Ibin	0.74
	simultaneously connectable		Nr.	2
Conductor section	A)A(O///!			
	AWG/Kcmil	may		10
	Flovible w/e lug conductor coction	max		10
	Flexible w/o lug conductor section	min	mm²	1
		max	mm²	6
	Flexible c/w lug conductor section	max	111111	0
	r lexible 6/W lug conductor section	min	mm²	1
		max	mm²	4
	Flexible with insulated spade lug conductor section	max		•
	The state of the s	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			g	500
Conductor section				
	AWG/kcmil conductor section			
		max		10
Auxiliary contact char	acteristics		•	10
Thermal current Ith			A	10
IEC/EN 60947-5-1 de				A600 - P600
Operating current AC	715	0001		•
		230V	A	3
		400V 500V	A	1.9
		5007	Α	1.4
O	110			
Operating current DC	212		Δ	F 7
•		110V	Α	5.7
		110V		
		110V 24V	Α	5.7
		110V 24V 48V	A A	5.7 2.9
•		110V 24V 48V 60V	A A A	5.7 2.9 2.3
•		110V 24V 48V 60V 110V	A A A	5.7 2.9 2.3 1.25
		110V 24V 48V 60V 110V 125V	A A A A	5.7 2.9 2.3 1.25 1.1
		110V 24V 48V 60V 110V 125V 220V	A A A A	5.7 2.9 2.3 1.25 1.1 0.55
Operating current DC		110V 24V 48V 60V 110V 125V	A A A A	5.7 2.9 2.3 1.25 1.1
Operating current DC		110V 24V 48V 60V 110V 125V 220V	A A A A A	5.7 2.9 2.3 1.25 1.1 0.55 0.2
Operating current DC  Operations  Mechanical life		110V 24V 48V 60V 110V 125V 220V	A A A A A A cycles	5.7 2.9 2.3 1.25 1.1 0.55 0.2
Operating current DC  Operations  Mechanical life  Electrical life		110V 24V 48V 60V 110V 125V 220V	A A A A A	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	213	110V 24V 48V 60V 110V 125V 220V	A A A A A A cycles	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		110V 24V 48V 60V 110V 125V 220V 600V	A A A A A A cycles	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	110V 24V 48V 60V 110V 125V 220V 600V	A A A A A A Cycles cycles	5.7 2.9 2.3 1.25 1.1 0.55 0.2 20000000 20000000
	10d according to EN/ISO 13489-1	110V 24V 48V 60V 110V 125V 220V 600V	A A A A A A cycles	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	110V 24V 48V 60V 110V 125V 220V 600V	A A A A A A Cycles cycles	5.7 2.9 2.3 1.25 1.1 0.55 0.2 20000000 20000000

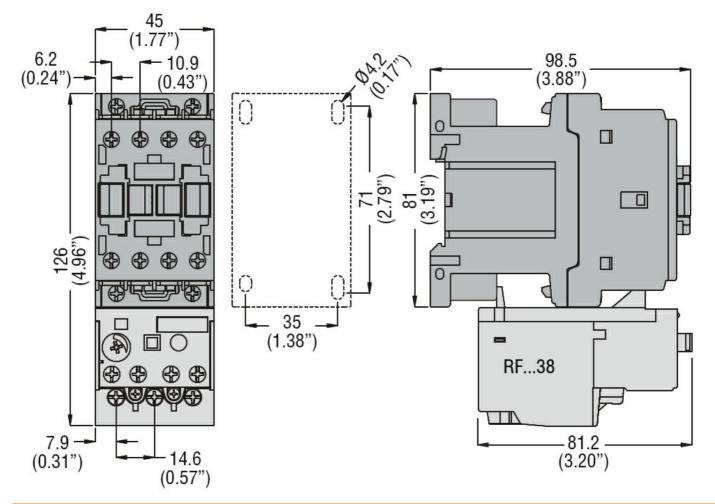
**ENERGY AND AUTOMATION** 

DC rated control voltage	ne			V	125
DC operating voltage	,,,			<u> </u>	
	pick-up				
	p.o up		min	%Us	70
			max	%Us	125
	drop-out			,,,,,	
	a. op 0 a.		min	%Us	10
			max	%Us	40
Average coil consump	tion ≤20°C		<u></u>		
			in-rush	W	5.4
			holding	W	5.4
Max cycles frequency			3		-
Mechanical operation				cycles/h	3600
Operating times					
Average time for Us co	ontrol				
	in AC				
		Closing NO			
		9	min	ms	8
			max	ms	24
		Opening NO		-	
		, 3	min	ms	10
			max	ms	20
		Closing NC			
		Ŭ	min	ms	14
			max	ms	28
		Opening NC			
		, ,	min	ms	7
			max	ms	18
	in DC				
		Closing NO			
			min	ms	54
			max	ms	66
		Opening NO			
			min	ms	14
			max	ms	17
UL technical data					
Full-load current (FLA)	for three-phase AC	motor			_
			at 480V	Α	11
			at 600V	Α	11
Yielded mechanical pe	rformance	<del></del>			
	for single-phase AC	C 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

**ENERGY AND AUTOMATION** 

## THREE-POLE CONTACTOR, IEC OPERATING CURRENT IE (AC3) = 12A, DC COIL, 125VDC, 1NO AUXILIARY CONTACT

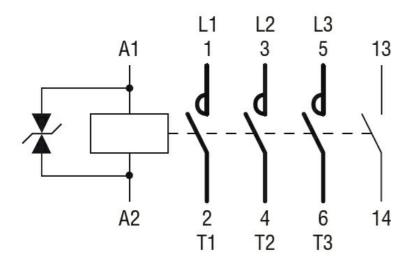
		DC voltage	V	250
		DC current	Α	1
Short-circuit protect	ion fuse, 600V			
	High fault			
	-	Short circuit current	kA	100
		Fuse rating	Α	30
		Fuse class		J
	Standard fault			
		Short circuit current	kA	5
		Fuse rating	Α	70
Contact rating of au	xiliary contacts according to UL			A600 - P600
Ambient conditions				
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				



### Wiring diagrams

**ENERGY AND AUTOMATION** 

THREE-POLE CONTACTOR, IEC OPERATING CURRENT IE (AC3) = 12A, DC COIL, 125VDC, 1NO 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