



Product designation Power contactor  
Product type designation BFS12

**Contact characteristics**

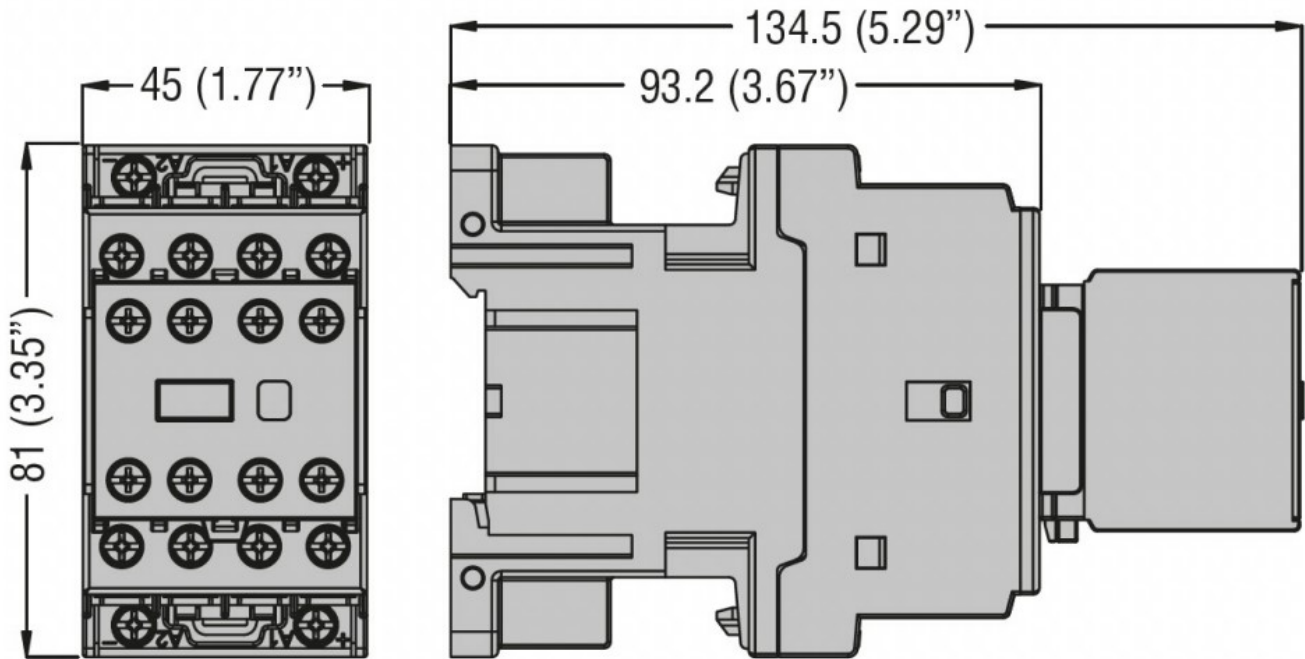
Number of poles	Nr.	3
Rated insulation voltage $U_i$ IEC/EN	V	690
Rated impulse withstand voltage $U_{imp}$	kV	6
Operational frequency	min	Hz 25
	max	Hz 400
IEC Conventional free air thermal current $I_{th}$	A	28
Operational current $I_e$	AC-1 ( $\leq 40^\circ\text{C}$ )	A 28
	AC-1 ( $\leq 40^\circ\text{C}$ ) with 16mm <sup>2</sup> wire and fork end lug	A 0
	AC-1 ( $\leq 55^\circ\text{C}$ )	A 23
	AC-1 ( $\leq 55^\circ\text{C}$ ) with 16mm <sup>2</sup> wire and fork end lug	A 0
	AC-1 ( $\leq 70^\circ\text{C}$ )	A 20
	AC-1 ( $\leq 70^\circ\text{C}$ ) with 16mm <sup>2</sup> wire and fork end lug	A 0
	AC-3 ( $\leq 440\text{V } \leq 55^\circ\text{C}$ )	A 12
Rated operational power AC-3 ( $T \leq 55^\circ\text{C}$ )	AC-4 (400V)	A 7.9
	230V	kW 3.2
	400V	kW 5.7
	415V	kW 6.2
	440V	kW 6.2
	500V	kW 7.5
Rated operational power AC-1 ( $T \leq 40^\circ\text{C}$ )	690V	kW 10
	230V	kW 10
	400V	kW 18
	500V	kW 23
IEC max current $I_e$ in DC1 with $L/R \leq 1\text{ms}$ with 1 poles in series	690V	kW 32
	$\leq 24\text{V}$	A 17
	48V	A 15
	75V	A 13
	110V	A 6
IEC max current $I_e$ in DC1 with $L/R \leq 1\text{ms}$ with 2 poles in series	220V	A –
	$\leq 24\text{V}$	A 20
	48V	A 20
	75V	A 18
	110V	A 13
IEC max current $I_e$ in DC1 with $L/R \leq 1\text{ms}$ with 3 poles in series	220V	A 1
	$\leq 24\text{V}$	A 22

	48V	A	22
	75V	A	20
	110V	A	16
	220V	A	11
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IEC max current Ie in DC1 with L/R ≤ 1ms with 4 poles in series	≤24V	A	20
	48V	A	20
	75V	A	20
	110V	A	16
	220V	A	12
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IEC max current Ie in DC3-DC5 with L/R ≤ 15ms with 1 poles in series	≤24V	A	12
	48V	A	11
	75V	A	10
	110V	A	2
	220V	A	–
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IEC max current Ie in DC3-DC5 with L/R ≤ 15ms with 2 poles in series	≤24V	A	15
	48V	A	13
	75V	A	12
	110V	A	8
	220V	A	2
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IEC max current Ie in DC3-DC5 with L/R ≤ 15ms with 3 poles in series	≤24V	A	18
	48V	A	18
	75V	A	15
	110V	A	12
	220V	A	6
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IEC max current Ie in DC3-DC5 with L/R ≤ 15ms with 4 poles in series	≤24V	A	15
	48V	A	15
	75V	A	15
	110V	A	16
	220V	A	7
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Short-time allowable current for 10s (IEC/EN60947-1)		A	150
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Protection fuse	gG (IEC)	A	32
	aM (IEC)	A	12
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Making capacity (RMS value)		A	120
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Breaking capacity at voltage	440V	A	96
	500V	A	96
	690V	A	94
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Resistance per pole (average value)		mΩ	2.5
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Power dissipation per pole (average value)	Ith	W	2
	AC-3	W	0.4
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Tightening torque for terminals	min	Nm	1.5
	max	Nm	1.8
	min	Ibin	1.1
	max	Ibin	1.5
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Tightening torque for coil terminal			

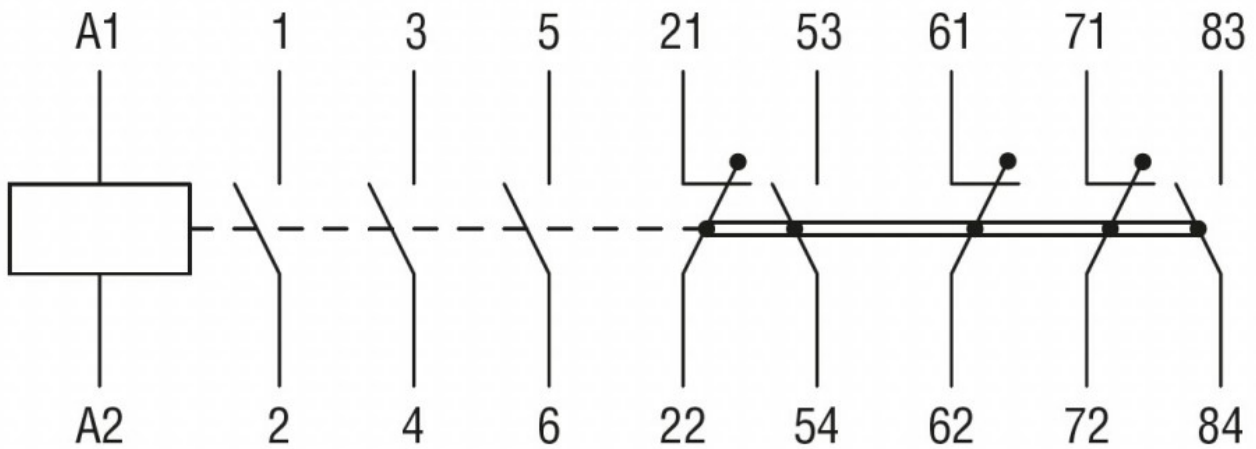
	min	Nm	0.8
	max	Nm	1
	min	I <sub>bin</sub>	0.8
	max	I <sub>bin</sub>	0.74
Max number of wires simultaneously connectable		Nr.	2
Conductor section	AWG/Kcmil		
	max		10
Flexible w/o lug conductor section	min	mm <sup>2</sup>	1
	max	mm <sup>2</sup>	6
Flexible c/w lug conductor section	min	mm <sup>2</sup>	1
	max	mm <sup>2</sup>	4
Flexible with insulated spade lug conductor section	min	mm <sup>2</sup>	1
	max	mm <sup>2</sup>	4
Power terminal protection according to IEC/EN 60529	IP20 when properly wired		
Cable stripping length	main circuit	mm	0
	command circuit	mm	0
	auxiliary circuit	mm	0
<b>Mechanical features</b>			
Operating position	normal allowable	Vertical plan ±30°	
Fixing	Screw / DIN rail 35mm		
Weight	g	490	
<b>Auxiliary contact characteristics</b>			
Thermal current I <sub>th</sub>	A	10	
IEC/EN 60947-5-1 designation	A600 - Q600		
Operating current AC15	230V	A	3
	400V	A	1.9
	500V	A	1.4
Operating current DC12	24V	A	0
	48V	A	0
	60V	A	0
	125V	A	0
	220V	A	0
	600V	A	0
Operating current DC13	110V	A	1.25
	125V	A	0.55
	600V	A	0.1
<b>Operations</b>			
Mechanical life	cycles	2000000	
Electrical life	cycles	2000000	
<b>Safety related data</b>			
Performance level B10d according to EN/ISO 13489-1	rated load	cycles	200000

	mechanical load	cycles	20000000
Mirror contacts according to IEC/EN 60947-4-1			Yes
EMC compatibility			yes
<b>Electrical characteristics</b>			
Operating current DC13	250V	A	0.27
	440V	A	0.15
	500V	A	0.13
<b>AC coil operating</b>			
AC operating voltage	of 50/60Hz coil powered at 50Hz		
	drop-out		
	max	%Us	0
<b>DC coil operating</b>			
DC rated control voltage		V	24
DC operating voltage			
	pick-up		
	min	%Us	70
	max	%Us	125
	drop-out		
	min	%Us	10
	max	%Us	40
Average coil consumption $\leq 20^{\circ}\text{C}$			
	in-rush	W	5.4
	holding	W	5.4
<b>Max cycles frequency</b>			
Mechanical operation		cycles/h	3600
<b>Operating times</b>			
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		
	min	ms	7
	max	ms	18
	in DC		
	Closing NO		
	min	ms	54
	max	ms	66
	Opening NO		
	min	ms	14
	max	ms	17
	Closing NC		
	min	ms	24
	max	ms	30
	Opening NC		
	min	ms	47

		max	ms	57
<b>UL technical data</b>				
Rated operational voltage AC (UL)			V	600
Full-load current (FLA) for three-phase AC motor				
		at 480V	A	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				
		200/208V	HP	5
		220/230V	HP	5
		460/480V	HP	7.5
		575/600V	HP	10
<b>General USE</b>				
Contactor				
		AC current	A	28
Auxiliary contacts				
		AC voltage	V	600
		AC current	A	10
		DC voltage	V	250
		DC current	A	1
Short-circuit protection fuse, 600V				
High fault				
		Short circuit current	kA	100
		Fuse rating	A	30
		Fuse class		J
Standard fault				
		Short circuit current	kA	5
		Fuse rating	A	70
Contact rating of auxiliary contacts according to UL				A600 - Q600
<b>Ambient conditions</b>				
Temperature				
Operating temperature				
		min	°C	-50
		max	°C	70
Storage temperature				
		min	°C	-60
		max	°C	80
Max altitude				m 3000
<b>Resistance &amp; Protection</b>				
Impact resistance				0
Vibration resistance				0
Special thermic treatments				0
Pollution degree				3
Resistance to flame (GWT)				0
Flame retardant according to UL94				0
<b>Dimensions</b>				



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  
IEC/EN/BS 60947-5-1  
UL 60947-1  
UL 60947-4-1

Certificates

cULus  
UL listed for USA and Canada

ETIM classification

ETIM 8.0

EC000066 -  
Power contactor,  
AC switching