



Product designation

Power contactor

Product type designation

BFS12

Contact characteristics

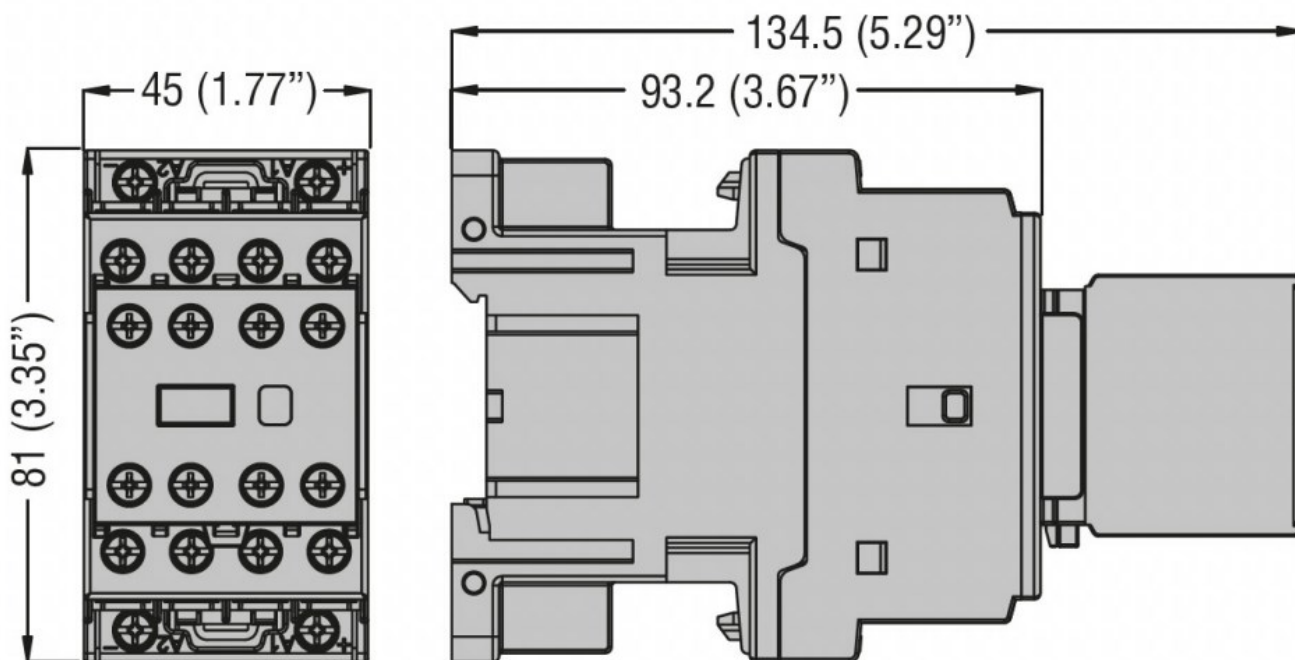
Number of poles	Nr.	3
Rated insulation voltage U_i IEC/EN	V	690
Rated impulse withstand voltage U_{imp}	kV	6
Operational frequency	min	Hz 25
	max	Hz 400
IEC Conventional free air thermal current I_{th}	A	28
Operational current I_e		
	AC-1 ($\leq 40^\circ\text{C}$)	A 28
	AC-1 ($\leq 40^\circ\text{C}$)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

	48V	A	22
	75V	A	20
	110V	A	16
	220V	A	11
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
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	–
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
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
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
Short-time allowable current for 10s (IEC/EN60947-1)		A	150
Protection fuse			
	gG (IEC)	A	32
	aM (IEC)	A	12
Making capacity (RMS value)		A	120
Breaking capacity at voltage			
	440V	A	96
	500V	A	96
	690V	A	94
Resistance per pole (average value)		mΩ	2.5
Power dissipation per pole (average value)			
	Ith	W	2
	AC-3	W	0.4
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			

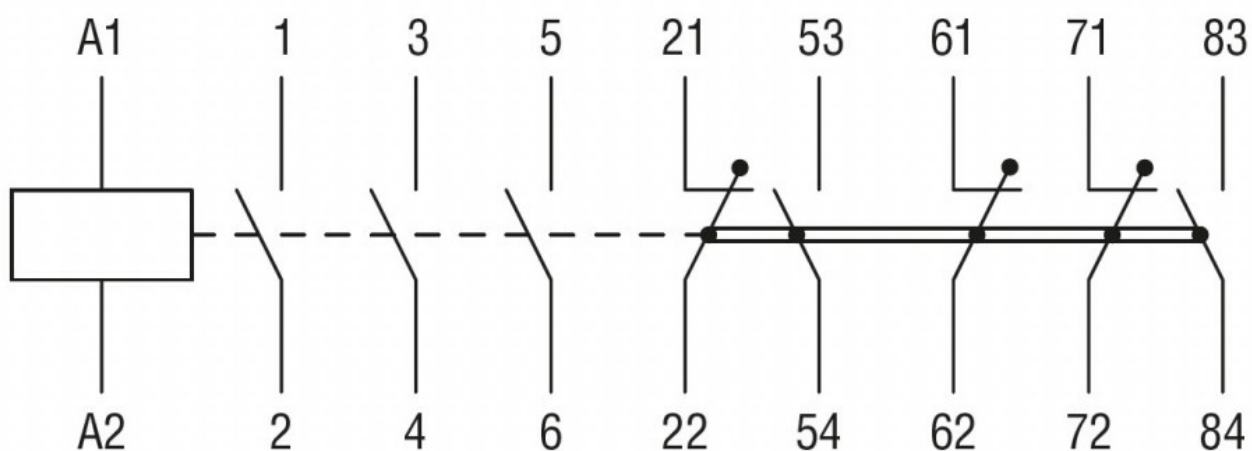
	min	Nm	0.8
	max	Nm	1
	min	I _{bin}	0.8
	max	I _{bin}	0.74
Max number of wires simultaneously connectable	Nr.		2
Conductor section			
AWG/Kcmil			
	max		10
Flexible w/o lug conductor section			
	min	mm ²	1
	max	mm ²	6
Flexible c/w lug conductor section			
	min	mm ²	1
	max	mm ²	4
Flexible with insulated spade lug conductor section			
	min	mm ²	1
	max	mm ²	4
Power terminal protection according to IEC/EN 60529			IP20 when properly wired
Cable stripping lenght			
	main circuit	mm	0
	command circuit	mm	0
	auxiliary circuit	mm	0
Mechanical features			
Operating position			
	normal allowable		Vertical plan ±30°
Fixing			Screw / DIN rail 35mm
Weight		g	490
Auxiliary contact characteristics			
Thermal current I _{th}		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
Operations			
Mechanical life		cycles	20000000
Electrical life		cycles	2000000
Safety related data			
Performance level B10d according to EN/ISO 13489-1			
	rated load	cycles	2000000

	mechanical load	cycles	20000000
Mirror contacts according to IEC/EN 60947-4-1			Yes
EMC compatibility			yes
Electrical characteristics			
Operating current DC13			
	250V	A	0.27
	440V	A	0.15
	500V	A	0.13
AC coil operating			
AC operating voltage			
	of 50/60Hz coil powered at 50Hz		
	drop-out		
	max	%Us	0
DC coil operating			
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 ≤20°C			
	in-rush	W	5.4
	holding	W	5.4
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		
	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
UL technical data				
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
General USE				
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
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				
Impact resistance				0
Vibration resistance				0
Special thermic treatments				0
Pollution degree				3
Resistance to flame (GWT)				0
Flame retardant according to UL94				0
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
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