



Product designation

Power contactor

Product type designation

BFS09

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	25
Operational current I_e		
	AC-1 ($\leq 40^\circ\text{C}$)	A 25
	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 20
	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 18
	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 9
	AC-4 (400V)	A 4.9
Rated operational power AC-3 ($T \leq 55^\circ\text{C}$)		
	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 ($T \leq 40^\circ\text{C}$)		
	230V	kW 9.5
	400V	kW 16
	500V	kW 21
	690V	kW 27
IEC max current I_e in DC1 with $L/R \leq 1\text{ms}$ with 1 poles in series		
	$\leq 24\text{V}$	A 15
	48V	A 13
	75V	A 12
	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 18
	48V	A 18
	75V	A 17
	110V	A 12
	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 20

	48V	A	20
	75V	A	20
	110V	A	15
	220V	A	10
IEC max current I_e in DC1 with $L/R \leq 1\text{ms}$ with 4 poles in series			
	$\leq 24\text{V}$	A	20
	48V	A	20
	75V	A	20
	110V	A	16
	220V	A	12
IEC max current I_e in DC3-DC5 with $L/R \leq 15\text{ms}$ with 1 poles in series			
	$\leq 24\text{V}$	A	10
	48V	A	9
	75V	A	8
	110V	A	2
	220V	A	–
IEC max current I_e in DC3-DC5 with $L/R \leq 15\text{ms}$ with 2 poles in series			
	$\leq 24\text{V}$	A	13
	48V	A	11
	75V	A	10
	110V	A	7
	220V	A	2
IEC max current I_e in DC3-DC5 with $L/R \leq 15\text{ms}$ with 3 poles in series			
	$\leq 24\text{V}$	A	15
	48V	A	15
	75V	A	13
	110V	A	11
	220V	A	6
IEC max current I_e in DC3-DC5 with $L/R \leq 15\text{ms}$ with 4 poles in series			
	$\leq 24\text{V}$	A	15
	48V	A	15
	75V	A	15
	110V	A	12
	220V	A	7
Short-time allowable current for 10s (IEC/EN60947-1)		A	150
Protection fuse			
	gG (IEC)	A	25
	aM (IEC)	A	10
Making capacity (RMS value)		A	90
Breaking capacity at voltage			
	440V	A	72
	500V	A	72
	690V	A	71
Resistance per pole (average value)		mΩ	2.5
Power dissipation per pole (average value)			
	I_{th}	W	1.6
	AC-3	W	0.2
Tightening torque for terminals			
	min	Nm	1.5
	max	Nm	1.8
	min	lbin	1.1
	max	lbin	1.5
Tightening torque for coil terminal			

	min	Nm	0.8	
	max	Nm	1	
	min	Ibin	0.8	
	max	Ibin	0.74	
Contact characteristics				
	Tightening torque for auxiliary contact terminals		Nmin	0.8
	Tightening torque for auxiliary contact terminals		Nmax	1
	Tightening torque for auxiliary contact terminals		Ibin	7.1
	Tightening torque for auxiliary contact terminals		Ibin	8.8
Max number of wires 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				
		min	mm²	1
		max	mm²	4
Flexible with insulated spade lug conductor section				
		min	mm²	1
		max	mm²	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	360
Auxiliary contact characteristics				
Thermal current Ith			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					
Rated AC voltage at 50/60Hz				V	24
AC operating voltage					
	of 50/60Hz coil powered at 50Hz				
	pick-up				
		min	%Us		80
		max	%Us		110
	drop-out				
		min	%Us		20
		max	%Us		55
	of 50/60Hz coil powered at 60Hz				
	pick-up				
		min	%Us		85
		max	%Us		110
	drop-out				
		min	%Us		20
		max	%Us		55
AC average coil consumption at 20°C					
	of 50/60Hz coil powered at 50Hz				
		in-rush	VA		75
		holding	VA		9
	of 50/60Hz coil powered at 60Hz				
		in-rush	VA		70
		holding	VA		6.5
	of 60Hz coil powered at 60Hz				
		in-rush	VA		75
		holding	VA		9
Dissipation at holding ≤20°C 50Hz				W	2.5
DC coil operating					
DC operating voltage					
	pick-up				
		min	%Us		0
		max	%Us		0
	drop-out				
		min	%Us		0
		max	%Us		0
Average coil consumption ≤20°C					
		in-rush	W		5.4
		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

min	ms	7
max	ms	18

in DC

Closing NO

min	ms	0
max	ms	0

Opening NO

min	ms	0
max	ms	0

Closing NC

min	ms	0
max	ms	0

Opening NC

min	ms	0
max	ms	0

UL technical data

Rated operational voltage AC (UL)	V	600
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Full-load current (FLA) for three-phase AC motor

at 480V	A	7.6
at 600V	A	9

Yielded mechanical performance

for single-phase AC motor

110/120V	HP	0.75
230V	HP	2

for three-phase AC motor

200/208V	HP	3
220/230V	HP	3
460/480V	HP	5
575/600V	HP	7.5

General USE

Contactor

AC current	A	25
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Auxiliary contacts

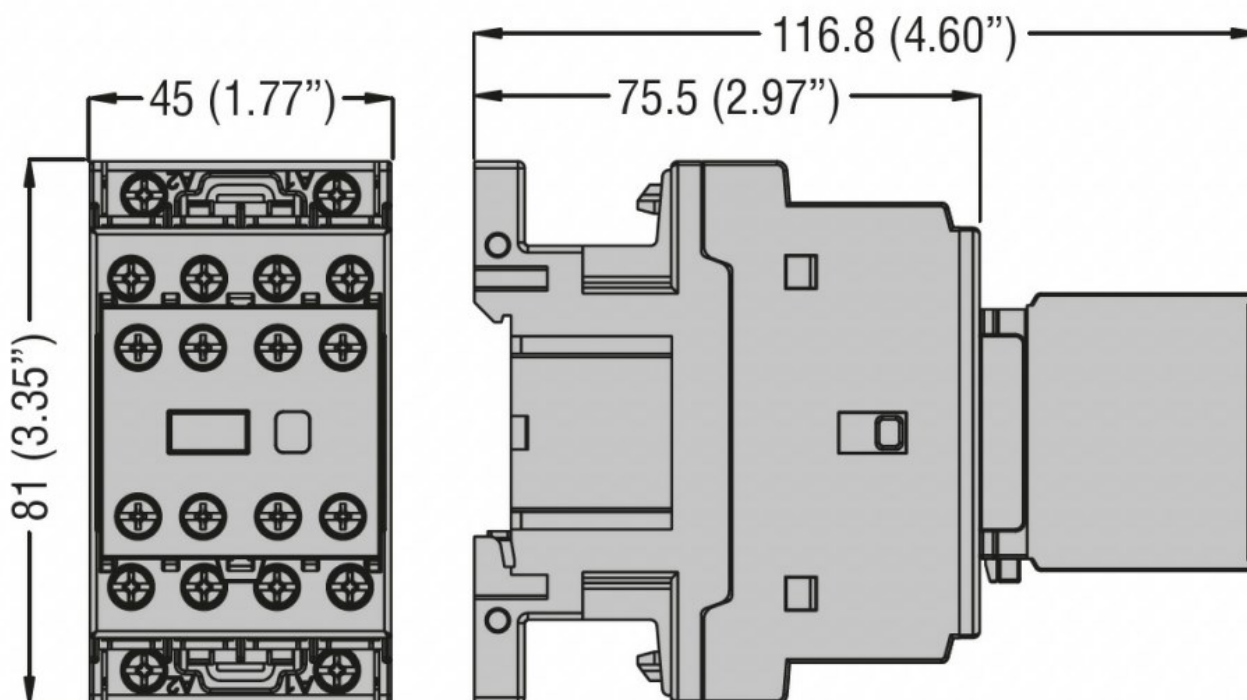
AC voltage	V	600
AC current	A	10
DC voltage	V	250
DC current	A	1

Short-circuit protection fuse, 600V

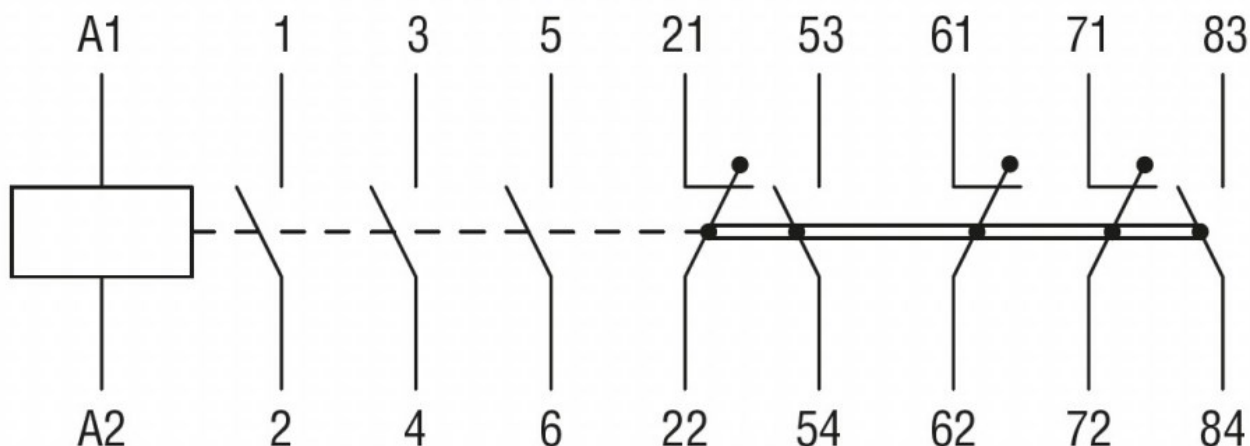
High fault

Short circuit current	kA	100
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		Fuse rating	A	30
		Fuse class		J
Standard fault				
		Short circuit current	kA	5
		Fuse rating	A	60
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