BFS0923A230

THREE-POLE SAFETY CONTACTOR, IEC OPERATING CURRENT IE (AC3) = 9A, AC COIL 50/60HZ, 230VAC, 2NO+3NC AUXILIARY CONTACT

Product designation			Power contactor
Product type designation			BFS09
Contact characteristics			
Number of poles		Nr.	3
Rated insulation voltage Ui IEC/EN		V	690
Rated impulse withstand voltage Uimp		kV	6
Operational frequency			
	min	Hz	25
	max	Hz	400
IEC Conventional free air thermal current Ith		A	25
Operational current Ie			
	AC-1 (≤40°C)	A	25
	AC-1 (≤40°C) with 16mm² wire and fork end lug	A	0
	AC-1 (≤55°C)	A	20
	AC-1 (≤55°C) with 16mm² wire and fork end lug	A	0
	AC-1 (≤70°C)	A	18
	AC-1 (≤70°C) with 16mm² wire and fork end lug	A	0
	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
	400V	kW	16
	500V	kW	21
	690V	kW	27
IEC max current Ie 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 Ie in DC1 with L/R ≤ 1ms with 2 poles in series			
	≤24V	A	18
	48V	A	18
	75V	A	17
	110V	A	12
	220V	A	1
IEC max current Ie in DC1 with L/R ≤ 1ms with 3 poles in series			
	≤24V	A	20

	48V	A	20
	75V	A	20
	110V	A	15
	220V	A	10
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	10
	48V	A	9
	75V	A	8
	110V	A	2
	220V	A	–
IEC max current Ie in DC3-DC5 with L/R ≤ 15ms with 2 poles in series			
	≤24V	A	13
	48V	A	11
	75V	A	10
	110V	A	7
	220V	A	2
IEC max current Ie in DC3-DC5 with L/R ≤ 15ms with 3 poles in series			
	≤24V	A	15
	48V	A	15
	75V	A	13
	110V	A	11
	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	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)			
	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	lbin	0.8
	max	lbin	0.74
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		Vertical plan
	allowable		±30°
Fixing			Screw / DIN rail 35mm
Weight		g	356
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 contats according to IEC/EN 609474-4-1				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	230
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	0
		holding	W	0
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
Full-load current (FLA) for three-phase AC motor					
			at 480V	A	7.6
			at 600V	A	0.375
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
	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	60
Contact rating of auxiliary contacts according to UL					A600 - Q600

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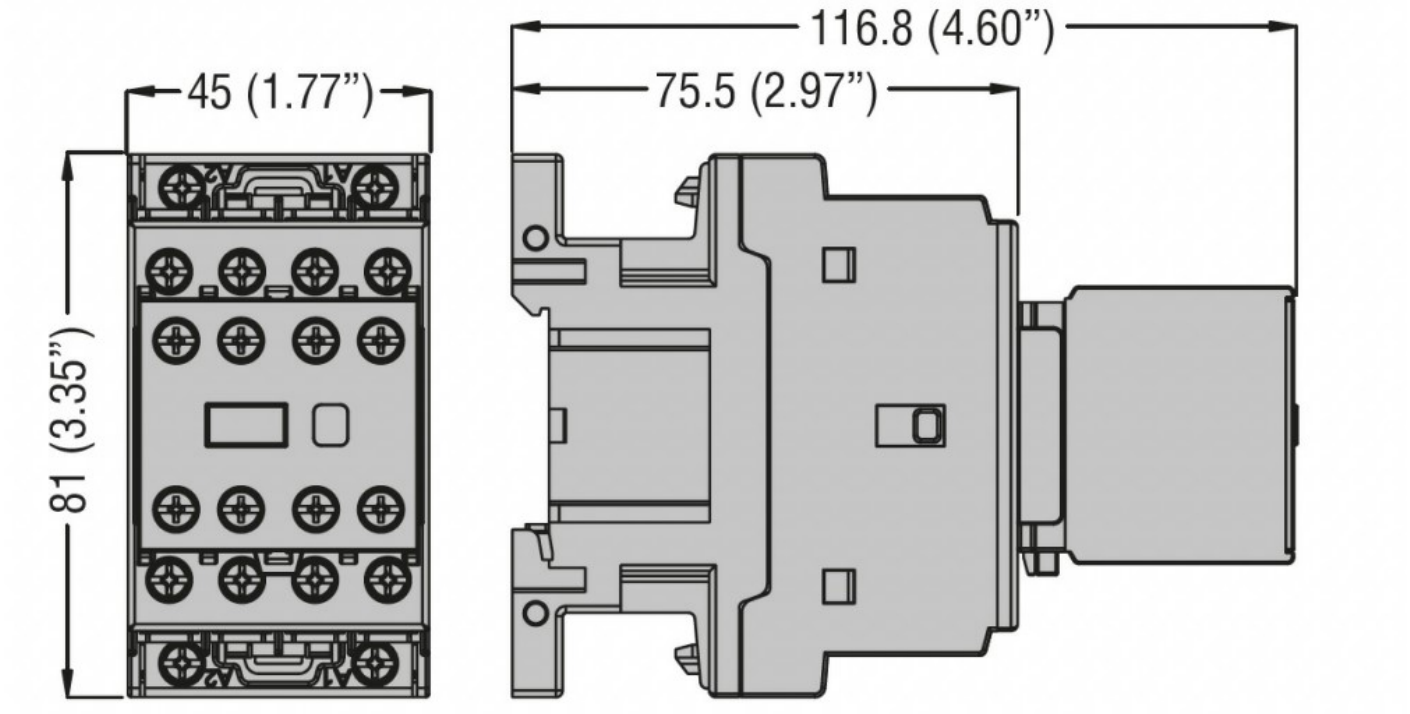
Ambient conditions

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

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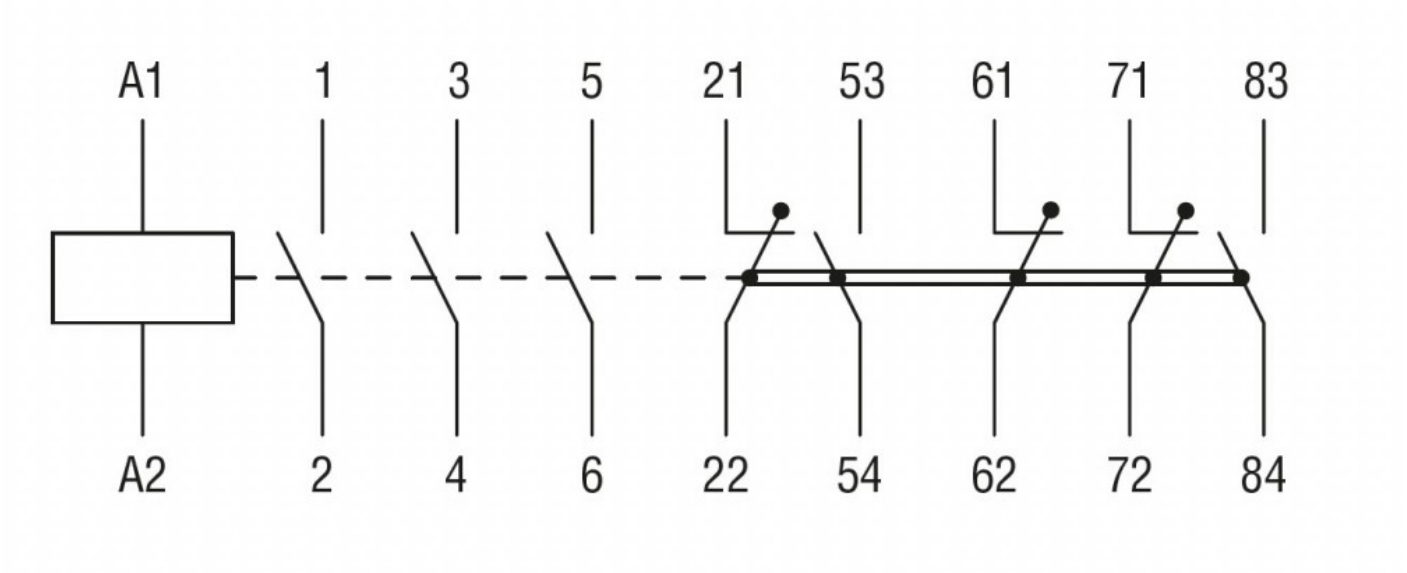

Certifications and compliance

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
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