



Product designation Product type designation		Power contactor 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	Α	25
Operational current le		
AC-1 (≤40°C)	Α	25
AC-1 (≤40°C) with 16mm² wire and fork end		0
AC-1 (≤55°C)	Α	20
AC-1 (≤55°C) with 16mm² wire and fork end	•	0
AC-1 (≤70°C)	Α	18
AC-1 (≤70°C) with 16mm² wire and fork end		0
AC-3 (≤440V ≤55°C) AC-4 (400V)	A	9 4.9
Rated operational power AC-3 (T≤55°C)	Α	4.9
230V	kW	2.2
400V	kW	4.2
400V 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 le in DC1 with L/R ≤ 1ms with 1 poles in series		
≤24V	Α	15
48V	Α	13
75V	Α	12
110V	Α	6
	Α	
IEC max current le in DC1 with L/R ≤ 1ms with 2 poles in series		
≤24V	Α	18
48V	A	18
75V	A	17
110V	A	12
IEC may ourront to in DC1 with L/B < 1mg with 2 pales in series	A	
IEC max current le in DC1 with L/R ≤ 1ms with 3 poles in series ≤24V	Α	20





	48V	Α	20	
	75V	Α	20	
	110V	Α	15	
	220V	Α	10	
EC 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	
EC max current le in DC3-DC5 with L/R ≤ 15ms with 1 poles in series				
	≤24V	Α	10	
	48V	Α	9	
	75V	Α	8	
	110V	Α	2	
	220V	A	_	
EC max current le in DC3-DC5 with L/R ≤ 15ms with 2 poles in series				
34.151.15 iii 2 00 200 Mili 2/1 = 10110 Mili 2 poloo iii 001100	≤24V	Α	13	
	48V	A	11	
	75V	A	10	
	110V	A	7	
	220V	A	2	
EC max current le in DC3-DC5 with L/R ≤ 15ms with 3 poles in series	220 V			
index current le in 200-200 with E/N = 15ms with 5 poles in series	≤24V	Α	15	
	48V	A	15	
	75V	A	13	
	110V	A	11	
	220V	A	6	
IEC max current le in DC3-DC5 with L/R ≤ 15ms with 4 poles in series	220 V			
in a max current le in 200-200 with E/X = 10m3 with 4 poles in 3ches	≤24V	Α	15	
	48V	A	15	
	75V	A	15	
	110V	A	12	
	220V	A	7	
Short-time allowable current for 10s (IEC/EN60947-1)	220 V		150	
Protection fuse			130	
Flotection ruse	aC (IEC)	۸	25	
	gG (IEC)	A	10	
Making canacity (DMC yalua)	aM (IEC)	A 	90	
Making capacity (RMS value)		A	90	
Breaking capacity at voltage	4401/	۸	70	
	440V	A	72 72	
	500V	A	72 71	
Desigtance per pale (everges value)	690V	A	71	
Resistance per pole (average value)		mΩ	2.5	
Power dissipation per pole (average value)	1.0	147	4.0	
	Ith	W	1.6	
The first of the second of the second of	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	lbin	0.8
On atom the about a deciration	max	lbin	0.74
Contact characteristic		a a la Marsina	0.0
	Tightening torque for auxiliary contact termir Tightening torque for auxiliary contact termir		0.8 1
	Tightening torque for auxiliary contact termin		7.1
	Tightening torque for auxiliary contact termin		8.8
Max number of wires	simultaneously connectable	Nr.	2
Conductor section	Similario da di Productio		
	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 protec	ction 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			Vertical plan
	normal		Vertical plan ±30°
	allowable		Screw / DIN rail
Fixing			35mm
Weight		g	360
Auxiliary contact chara	acteristics	9	000
Thermal current Ith		Α	10
IEC/EN 60947-5-1 de	signation		A600 - Q600
Operating current AC			
,	230V	Α	3
	400V	A	1.9
	500V	Α	1.4
Operating current DC			
,	 24V	Α	0
	48V	Α	0
	60V	Α	0
	125V	Α	0
	220V	Α	0
	600V	A	0
Operating current DC			
, 9::::::::	110V	Α	1.25
	125V	Α	0.55
	600V	Α	0.1
Operations			



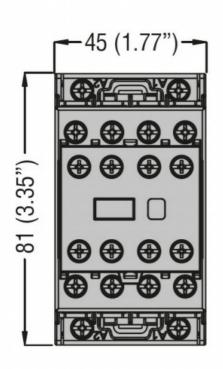
Electrical life	Mechanical life			cycles	20000000
Performance level B10d according to EIX/ISO 13489-1 rated load mechanical load of yoles and possible production of the pr				cycles	2000000
Mirror contacts according to IEC/EN 609474-4-1 yes yes EMC compatibility yes yes EMC compatibility yes yes EMC compatibility yes					
Mirror contats according to IEC/EN 609474-4-1	Performance level B10	d according to EN/ISO 13489-1			
Mirror contats according to IEC/EN 609474-4-1 yes				-	
EMC compatibility Electrical characteristics		, IEO/EN 000 474 4 4	mechanical load	cycles	
Section Content Con		g to IEC/EN 609474-4-1			
Separating current DC13		•			yes
AC coil operating AC coil operating AC coil operating AC coil operating AC coil operating voltage					
AC coil operating A40V A 0.15 500V A 0.13	Operating current DC 1.	5	250\/	۸	0.27
Rated AC voltage at 50/60Hz coil powered at 50Hz Pick-up Pi					
AC coil operating Rated AC voltage at 50/60Hz V 24 AC operating voltage of 50/60Hz coil powered at 50Hz pick-up min max %Us 80 max min max %Us 20 max max %Us 55 of 50/60Hz coil powered at 60Hz pick-up min max %Us 85 max max %Us 110 85 max drop-out min 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 holding vA 9 of 50/60Hz coil powered at 60Hz in-rush vA 75 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 w 2.5 DC coil operating voltage min max					
Rated AC voltage at 50/60Hz V	AC coil operating		300 V		0.10
AC operating voltage of 50/60Hz coil powered at 50Hz pick-up min		1/60Hz		V	24
of 50/60Hz coil powered at 50Hz pick-up min					
Pick-up min %Us 80 max %Us 110 Min Mil Mil		of 50/60Hz coil powered at 50Hz			
drop-out min max %Us 80 max %Us 110 min max %Us 20 max %Us 55 max %Us 110 min max %Us 55 max %Us 110 min max %Us 55 max min max min max min max max min min min max min min min max min		-			
Minima			min	%Us	80
Min WUS 20 max WUS 55			max	%Us	110
Max Wus 55		drop-out			
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 s20°C 50Hz 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 Average coil consumption ≤20°C in-rush vA 75 holding vA 9 Average coil consumption ≤20°C in-rush vA 75 holding vA 9 Average coil consumption ≤20°C			min	%Us	20
Pick-up			max	%Us	55
Min WUs 85		of 50/60Hz coil powered at 60Hz			
Max Mus 110		pick-up			
AC average coil consumption at 20°C Of 50/60Hz coil powered at 50Hz In-rush holding VA 9			min	%Us	85
min max %Us between 50 max 20 max AC average coil consumption at 20°C of 50/60Hz coil powered at 50Hz in-rush holding VA 9 VA 75 holding VA 9 of 50/60Hz coil powered at 60Hz in-rush holding VA 6.5 VA 70 holding VA 6.5 of 60Hz coil powered at 60Hz in-rush holding VA 9 VA 75 holding VA 9 Dissipation at holding ≤20°C 50Hz W 2.5 VA 25 DC coil operating W 2.5 VA 25 DC operating voltage min %Us 0 max %Us 0 drop-out 0 max %Us 0 drop-out min max %Us 0 max %Us 0 0 max %Us 0 Average coil consumption ≤20°C in-rush W 5.4 holding W 2.4			max	%Us	110
Max Mus S5		drop-out			
AC average coil consumption at 20°C of 50/60Hz coil powered at 50Hz in-rush VA 75 holding VA 9			min		
of 50/60Hz coil powered at 50Hz in-rush VA 75 holding VA 9			max	%Us	55
in-rush holding VA 75 holding VA 9	AC average coil consul				
holding		of 50/60Hz coil powered at 50Hz	in much	١/٨	7.5
of 50/60Hz coil powered at 60Hz in-rush					
in-rush holding		of FO/COLLT and powered at COLLT	nolaing	VA	9
holding		of 50/60Hz coil powered at 60Hz	in ruch	١/٨	70
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 max %Us 0 Average coil consumption ≤20°C in-rush W 5.4 holding W 2.4					
in-rush		of 60Hz coil powered at 60Hz	Holding	V /-1	<u> </u>
Dissipation at holding ≤20°C 50Hz W 2.5 DC coil operating W 2.5 DC operating voltage min %Us 0 max %Us 0 0 drop-out min %Us 0 max %Us 0 0 Average coil consumption ≤20°C in-rush W 5.4 holding W 2.4		5. 55/12 55/1 poworod at 55/12	in-rush	VA	75
Dissipation at holding ≤20°C 50Hz DC coil operating DC operating voltage pick-up min %Us 0 max %Us 0 drop-out min %Us 0 max %Us 0 x yull out Average coil consumption ≤20°C					
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	Dissipation at holding ≤	20°C 50Hz	9		
DC operating voltage pick-up					
pick-up min %Us 0 max %Us 0 drop-out min %Us 0 max %Us 0 max %Us 0 Average coil consumption ≤20°C in-rush W 5.4 holding W 2.4					
$\frac{\text{min}}{\text{max}} \begin{tabular}{ll} $\text{\%Us} & 0 \\ \hline & & & & & & \\ \hline & & & & & \\ \hline & & & &$, ,	pick-up			
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		•	min	%Us	0
min min max %Us 0 0 0 Average coil consumption ≤20°C in-rush W 5.4 holding W 2.4					
min min max %Us 0 0 0 Average coil consumption ≤20°C in-rush W 5.4 holding W 2.4		drop-out			
Average coil consumption ≤20°C in-rush W 5.4 holding W 2.4			min	%Us	0
in-rush W 5.4 holding W 2.4			max	<u>%U</u> s	0
holding W 2.4	Average coil consumpt	ion ≤20°C			
· · · · · · · · · · · · · · · · · · ·			in-rush	W	5.4
			holding	W	2.4
Max cycles frequency	Max cycles frequency				

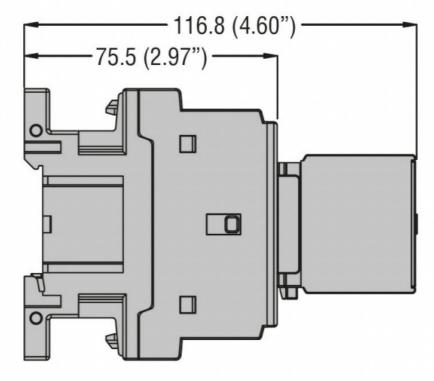


Mechanical operation			cycles/h	3600
Operating times				
Average time for Us of	control			
	in AC			
	Closing NO			
		min	ms	8
	0 : 110	max	ms	24
	Opening NO			40
		min	ms	10
	Closing NC	max	ms	20
	Closing NC	min	me	14
		max	ms ms	28
	Opening NC	IIIax	1113	20
	Opening NO	min	ms	7
		max	ms	18
	in DC	Пах	1110	10
	Closing NO			
	5.55mg 115	min	ms	0
		max	ms	0
	Opening NO			
	2	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	10 (11)			
Rated operational vol			V	600
Rated operational vol	tage AC (UL) A) for three-phase AC motor	1.400/	V	
Rated operational vol		at 480V	V A	7.6
Rated operational vol Full-load current (FLA	(a) for three-phase AC motor	at 480V at 600V	V	
Rated operational vol	r) for three-phase AC motor erformance		V A	7.6
Rated operational vol Full-load current (FLA	(a) for three-phase AC motor	at 600V	V A A	7.6 0.375
Rated operational vol Full-load current (FLA	r) for three-phase AC motor erformance	at 600V 110/120V	V A A	7.6 0.375
Rated operational vol Full-load current (FLA	erformance for single-phase AC motor	at 600V	V A A	7.6 0.375
Rated operational vol Full-load current (FLA	r) for three-phase AC motor erformance	at 600V 110/120V 230V	V A A HP HP	7.6 0.375 0.75 2
Rated operational vol Full-load current (FLA	erformance for single-phase AC motor	at 600V 110/120V 230V 200/208V	V A A HP HP	7.6 0.375 0.75 2
Rated operational vol Full-load current (FLA	erformance for single-phase AC motor	at 600V 110/120V 230V 200/208V 220/230V	V A A HP HP HP	7.6 0.375 0.75 2
Rated operational vol Full-load current (FLA	erformance for single-phase AC motor	at 600V 110/120V 230V 200/208V 220/230V 460/480V	V A A HP HP HP	7.6 0.375 0.75 2 3 3 5
Rated operational vol Full-load current (FLA Yielded mechanical p	erformance for single-phase AC motor	at 600V 110/120V 230V 200/208V 220/230V	V A A HP HP HP	7.6 0.375 0.75 2
Rated operational vol Full-load current (FLA	erformance for single-phase AC motor for three-phase AC motor	at 600V 110/120V 230V 200/208V 220/230V 460/480V	V A A HP HP HP	7.6 0.375 0.75 2 3 3 5
Rated operational vol Full-load current (FLA Yielded mechanical p	erformance for single-phase AC motor	at 600V 110/120V 230V 200/208V 220/230V 460/480V 575/600V	V A A HP HP HP HP HP	7.6 0.375 0.75 2 3 3 5 7.5
Rated operational vol Full-load current (FLA Yielded mechanical p	erformance for single-phase AC motor for three-phase AC motor Contactor	at 600V 110/120V 230V 200/208V 220/230V 460/480V	V A A HP HP HP	7.6 0.375 0.75 2 3 3 5
Rated operational vol Full-load current (FLA Yielded mechanical p	erformance for single-phase AC motor for three-phase AC motor	at 600V 110/120V 230V 200/208V 220/230V 460/480V 575/600V	V A A HP HP HP HP HP A	7.6 0.375 0.75 2 3 3 5 7.5
Rated operational vol Full-load current (FLA Yielded mechanical p	erformance for single-phase AC motor for three-phase AC motor Contactor	at 600V 110/120V 230V 200/208V 220/230V 460/480V 575/600V AC current	V A A HP HP HP HP HP HP V	7.6 0.375 0.75 2 3 3 5 7.5
Rated operational vol Full-load current (FLA Yielded mechanical p	erformance for single-phase AC motor for three-phase AC motor Contactor	at 600V 110/120V 230V 200/208V 220/230V 460/480V 575/600V AC current AC voltage AC current	V A A HP HP HP HP HP A V A	7.6 0.375 0.75 2 3 3 5 7.5 25 600 10
Rated operational vol Full-load current (FLA Yielded mechanical p	erformance for single-phase AC motor for three-phase AC motor Contactor	at 600V 110/120V 230V 200/208V 220/230V 460/480V 575/600V AC current AC voltage AC current DC voltage	V A A HP HP HP HP HP A V A V	7.6 0.375 0.75 2 3 3 5 7.5 25 600 10 250
Rated operational vol Full-load current (FLA Yielded mechanical p	erformance for single-phase AC motor for three-phase AC motor Contactor Auxiliary contacts	at 600V 110/120V 230V 200/208V 220/230V 460/480V 575/600V AC current AC voltage AC current	V A A HP HP HP HP HP A V A	7.6 0.375 0.75 2 3 3 5 7.5 25 600 10
Rated operational vol Full-load current (FLA Yielded mechanical p	erformance for single-phase AC motor for three-phase AC motor Contactor Auxiliary contacts	at 600V 110/120V 230V 200/208V 220/230V 460/480V 575/600V AC current AC voltage AC current DC voltage	V A A HP HP HP HP HP A V A V	7.6 0.375 0.75 2 3 3 5 7.5 25 600 10 250
Rated operational vol Full-load current (FLA Yielded mechanical p	erformance for single-phase AC motor for three-phase AC motor Contactor Auxiliary contacts	at 600V 110/120V 230V 200/208V 220/230V 460/480V 575/600V AC current AC voltage AC current DC voltage	V A A HP HP HP HP HP A V A V	7.6 0.375 0.75 2 3 3 5 7.5 25 600 10 250



	Fuse rating	Α	30
	Fuse class		J
Standard fault			
	Short circuit current	kA	5
	Fuse rating	Α	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			

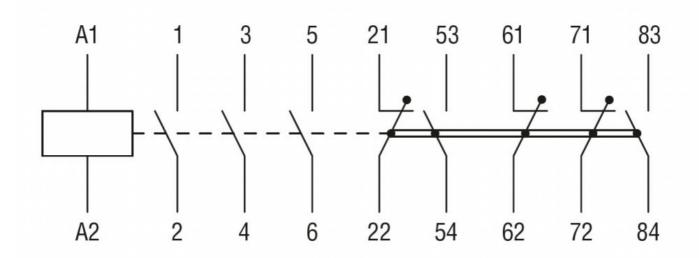




Wiring diagrams

ENERGY AND AUTOMATION

THREE-POLE SAFETY CONTACTOR, IEC OPERATING CURRENT IE (AC3) = 9A, AC COIL 50/60HZ, 24VAC, 2NO+3NC 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

IEC/EN/BS 60947-5-1

UL 60947-1

UL 60947-4-1

Certificates

cUL us

UL listed for USA and Canada

ETIM classification

ETIM 8.0

EC000066 -Power contactor, AC switching

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