

FOUR-POLE CONTACTOR, IEC OPERATING CURRENT ITH (AC1) = 90A, AC COIL 60HZ, 220VAC



Product designation			Power contactor
Product type designation			BF50
Contact characteristics			
Number of poles		Nr.	4
Rated insulation voltage Ui IEC/EN		V	1000
Rated impulse withstand voltage Uimp		kV	8
Operational frequency			
	min	Hz	25
	max	Hz	400
IEC Conventional free air thermal current Ith		Α	90
Operational current le			
	AC-1 (≤40°C)	Α	90
	AC-1 (≤55°C)	Α	75
	AC-1 (≤70°C)	Α	65
	AC-3 (≤440V ≤55°C)	Α	50
	AC-4 (400V)	Α	28
Rated operational current AC-3 (T≤55°C)			
	230V	Α	50
	400V	Α	50
	415V	Α	50
	440V	Α	50
	500V	Α	44
	690V	Α	39
	1000V	Α	23
Rated operational power AC-1 (T≤40°C)			
	230V	kW	34
	400V	kW	59
	500V	kW	74
	690V	kW	102
IEC max current le in DC1 with L/R ≤ 1ms with 1 poles in series			
	≤24V	Α	45
	48V	Α	40
	75V	Α	40
	110V	Α	8
	220V	Α	_
IEC max current le in DC1 with L/R ≤ 1ms with 2 poles in series			
	≤24V	Α	60
	48V	Α	60
	75V	Α	60
	110V	Α	50
	220V	Α	7
IEC max current le in DC1 with L/R ≤ 1ms with 3 poles in series			
	≤24V	Α	60
	48V	Α	60
	75\/	Α.	00

75V

60



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	110V	Α	55
	220V	Α	75
IEC max current le in DC1 with L/R ≤ 1ms with 4 poles in series			
	≤24V	Α	60
	48V	Α	60
	75V	Α	60
	110V	Α	60
	220V	Α	90
IEC max current le in DC3-DC5 with L/R ≤ 15ms with 1 poles in series			
	≤24V	Α	30
	48V	Α	25
	75V	Α	22
	110V	Α	3
	220V	Α	_
IEC max current le in DC3-DC5 with L/R ≤ 15ms with 2 poles in series			
	≤24V	Α	35
	48V	A	35
	75V	Α	30
	110V	A	25
	220V	A	5
IEC max current le in DC3-DC5 with L/R ≤ 15ms with 3 poles in series	2201	- , ,	
TEO Max current to in 200 200 with 2/1/2 Tome with a poled in conce	≤24V	Α	50
	48V	A	50
	75V	A	45
	110V	A	30
	220V	A	40
IEC max current le in DC3-DC5 with L/R ≤ 15ms with 4 poles in series	220 V		40
120 max current le in 200-200 with 2/10 13 with 4 poles in series	≤24V	Α	55
	48V	A	55 55
	75V	A	55 55
	110V	A	45
	220V	A	50
Short-time allowable current for 10s (IEC/EN60947-1)	220 V		400
			400
Protection fuse	aC (IEC)	۸	100
	gG (IEC)	A	100 50
Making apparity (DMC value)	aM (IEC)	A	
Making capacity (RMS value)		Α	500
Breaking capacity at voltage	4.4017	۸	400
	440V	A	400
	500V	A	352
Desigtance normale (overesse value)	690V	A	312
Resistance per pole (average value)		mΩ	0.8
Power dissipation per pole (average value)	1.1	147	0.5
	Ith	W	6.5
	AC-3	W	2
Tightening torque for terminals	_		
	min	Nm	4
	max	Nm	5
	min	lbin	2.95
	max	Ibin	3.69
Tightening torque for coil terminal			
	min	Nm	0.8
	max	Nm	1





FOUR-POLE CONTACTOR, IEC OPERATING CURRENT ITH (AC1) = 90A, AC COIL 60HZ,

Max number of wires simultaneously connectable Ni. 2						0.0
Max number of wires simultaneously connectable Nr. 2 Conductor section AWG/Kcmil max 2 Flexible w/o lug conductor section minimal max mm² 1.5 Flexible c/w lug conductor section min mm² 1.5 Flexible c/w lug conductor section min mm² 1.5 power terminal protection according to IEC/EN 60529 monmal mm² 1.5 Mechanical features monmal screw / DIN rail 35mm Operating position normal screw / DIN rail 35mm Fixing g cycles 15000000 35mm Fixing g cycles 15000000 35mm Weight g cycles 15000000 15000000 15000000 15000000 Fixing g cycles 15000000 15000000 15000000 15000000 15000000 15000000 15000000 15000000 15000000 15000000 15000000 15000000 15000000 15000000 15000000 150000000 150000000 150000000 150000000				min	lbin	0.8
Conductor section max z Flexible w/o lug conductor section min mmx mm² mm² mm² mm² mm² mm² mm² mm² mm²				max		
AWG/Kcmi Flexible wio lug conductor section min min max mm² 1.5		simultaneously connectabl	e		Nr.	2
Flexible w/o lug conductor section min mm² 1.5 max mm² 3.5 max	Conductor section					
Flexible w/o lug conductor section		AWG/Kcmil				
Prize				max		2
Flexible c/w lug conductor section min		Flexible w/o lug conduc	tor section			
Flexible c/w lug conductor section min mm2 1.5				min		
Main				max	mm²	35
Power terminal protection according to IEC/EN 60529 P20 front		Flexible c/w lug conduct	tor section			
Power terminal protection according to IEC/EN 60529				min	mm²	1.5
Mechanical features Operating position normal allowable Vertical plan ±30° Fixing Screw / DIN rail ±30°				max	mm²	35
Operating position Normal allowable Vertical plan tags of the part o	Power terminal protect	tion according to IEC/EN	60529			IP20 front
Pixing	Mechanical features					
Fixing Second Properties Fixing Fixing Second Properties Second Propertie	Operating position					
Fixing Second Properties Fixing Fixing Second Properties Second Propertie				normal		Vertical plan
Fixing Screw / DIN rail 35mm Weight 9 1240 Operations Mechanical life cycles 15000000 Electrical life cycles 1400000 Safety related data Performance level B10d according to EN/ISO 13489-1 Frated load mechanical load cycles 15000000 EMC compatibility yes AC coil operating AC coil operating AC coil operating voltage of 60Hz coil powered at 60Hz pick-up min max %US 110 drop-out min mx %US 20 max %US 110 drop-out min mx %US 20 max %US 55 AC average coil consumption at 20°C of 60Hz coil powered at 60Hz of 60Hz coil powered at 60Hz AC average coil consumption at 20°C of 60Hz coil powered at 60Hz in-rush holding VA 15 Dissipation at holding ≤20°C 50Hz Max cycles frequency Mechanical operation cycles/h 3600 Operating times Average time for Us control in AC Closing NO min ms 12 max ms 28 Opening NO min ms 8				allowable		
Weight Saffilm Saffilm						Screw / DIN rail
Operations Mechanical life cycles 15000000 Electrical life cycles 15000000 Safety related data Performance level B10d according to EN/ISO 13489-1 rated load cycles 1400000 mechanical load cycles 15000000 EMC compatibility yes AC coil operating V 220 AC operating voltage of 60Hz coil powered at 60Hz pick-up min %Us 80 Max %Us 20 max %Us 80 max %Us 80 max %Us 80 Max oyelas frequency w 5 Average time for Us control in AC Closing NO min ms 12 Max oyelas frequency min min min min min min min min min min <td< td=""><td>rixirig</td><td></td><td></td><td></td><td></td><td>35mm</td></td<>	rixirig					35mm
Operations Mechanical life cycles 15000000 Electrical life cycles 15000000 Safety related data Performance level B10d according to EN/ISO 13489-1 rated load cycles 1400000 mechanical load cycles 15000000 EMC compatibility yes AC coil operating V 220 AC operating voltage of 60Hz coil powered at 60Hz pick-up min %Us 80 Max %Us 20 max %Us 80 max %Us 80 max %Us 80 Max oyelas frequency w 5 Average time for Us control in AC Closing NO min ms 12 Max oyelas frequency min min min min min min min min min min <td< td=""><td>Weight</td><td></td><td></td><td></td><td>g</td><td>1240</td></td<>	Weight				g	1240
Mechanical life						
Electrical life	Mechanical life				cycles	15000000
Safety related data Performance level B10d according to EN/ISO 13489-1 rated load mechanical load cycles 1400000 mechanical load cycles 15000000	Electrical life					1400000
Performance level B10d according to EN/ISO 13489-1 rated load mechanical load occording to EN/ISO 13489-1 Fasted Index of Source of Country Tasted Index occording to EN/ISO 13489-1 EMC coil operating Rated AC voltage at 60Hz V 220 AC operating voltage min of 60Hz coil powered at 60Hz min of WUs of Source of English to English						
Part		0d according to EN/ISO 1	3489-1			
EMC compatibility EMC compatibility Rated AC voltage at 60Hz Final Point P		ou according to		rated load	cycles	1400000
EMC compatibility AC coil operating Rated AC voltage at 60Hz AC operating voltage of 60Hz coil powered at 60Hz pick-up min %Us 80 max %Us 110 drop-out min %Us 20 max %Us 55 AC average coil consumption at 20°C of 60Hz coil powered at 60Hz are in-rush va 210 holding VA 15 Dissipation at holding ≤20°C 50Hz Max cycles frequency Mechanical operation Operating times Average time for Us control in AC Closing NO min ms 12 max ms 28 Opening NO min ms 8					-	
AC coil operating Rated AC voltage at 60Hz V 220 AC operating voltage of 60Hz coil powered at 60Hz min %Us 80 pick-up min %Us 80 max %Us 110 drop-out min %Us 20 max %Us 55 AC average coil consumption at 20°C of 60Hz coil powered at 60Hz in-rush VA 210 holding VA 15 Dissipation at holding S20°C 50Hz W 5 Max cycles frequency W 5 Max expelse frequency Secondary Secondary Secondary Secondary Mechanical operation cycles/h 3600 Operating times Average time for Us control in AC min ms 12 max ms 28 Opening NO min ms 28 Opening NO min ms 8	FMC compatibility			moonamoanoaa		
Rated AC voltage at 60Hz AC operating voltage of 60Hz coil powered at 60Hz pick-up min %Us 80 max %Us 110 110 drop-out min %Us 20 max %Us 55 55 AC average coil consumption at 20°C in-rush VA 210 of 60Hz coil powered at 60Hz in-rush holding VA 15 Dissipation at holding ≤20°C 50Hz W 5 Max cycles frequency W 5 Mechanical operation cycles/h 3600 Operating times Average time for Us control in AC min ms 12 Closing NO min ms 28 Opening NO min ms 28						yee
AC operating voltage of 60Hz coil powered at 60Hz pick-up min %Us 80 max %Us 110 drop-out min %Us 20 max %Us 55 AC average coil consumption at 20°C of 60Hz coil powered at 60Hz in-rush VA 210 holding VA 15 Dissipation at holding ≤20°C 50Hz Max cycles frequency Mechanical operation cycles/h 3600 Operating times Average time for Us control in AC Closing NO min ms 12 max ms 28 Opening NO min ms 8		0Hz			V	220
of 60Hz coil powered at 60Hz pick-up min		0112				
Pick-up min %Us 80 max %Us 110 Min min %Us 20 max %Us 55 Max cycles frequency Mechanical operation min AC Closing NO Min ms 12 max ms 28 Min Min ms 8 Min ms 8 Min Min Min Min Min ms 8 Min	Ac operating voltage	of 60Hz coil nowared at	60H-7			
min max %Us 80 max %Us 110		or our iz con powered at				
Max Mus 110 Min Mus 20 Max Mus 55 Mus Mus 55 Mus			pick-up	min	0/ L lo	90
drop-out min						
min max wus 200 max wus 55AC average coil consumption at 20°C of 60Hz coil powered at 60Hzin-rush vA 210 holding VA 15Dissipation at holding ≤20°C 50HzW 5Max cycles frequencyW 5Mechanical operationcycles/h 3600Operating timesAverage time for Us control in ACmin ms 12 max ms 28Closing NOmin ms 12 max ms 28Opening NOmin ms 88			dran out	IIIax	7005	110
AC average coil consumption at 20°C of 60Hz coil powered at 60Hz in-rush VA 210 holding VA 15 Dissipation at holding ≤20°C 50Hz W 5 Max cycles frequency Mechanical operation cycles/h 3600 Operating times Average time for Us control in AC Closing NO min ms 12 max ms 28 Opening NO min ms 8			αιορ-οαι	min	0/116	20
AC average coil consumption at 20°C of 60Hz coil powered at 60Hz in-rush VA 210 holding VA 15 Dissipation at holding ≤20°C 50Hz W 5 Max cycles frequency Mechanical operation cycles/h 3600 Operating times Average time for Us control in AC Closing NO min ms 12 max ms 28 Opening NO min ms 8						
of 60Hz coil powered at 60Hz in-rush VA 210 holding VA 15 Dissipation at holding ≤20°C 50Hz W 5 Max cycles frequency Mechanical operation cycles/h 3600 Operating times Average time for Us control in AC Closing NO min ms 12 max ms 28 Opening NO min ms 8	AC average asil series	Imption at 20°C		max	7₀US	ບບ
in-rush vA 210 holding vA 15 Dissipation at holding ≤20°C 50Hz W 5 Max cycles frequency Mechanical operation cycles/h 3600 Operating times Average time for Us control in AC Closing NO min ms 12 max ms 28 Opening NO min ms 8	AC average con const		COLI-			
Dissipation at holding ≤20°C 50HzN15Max cycles frequencyMechanical operationcycles/h3600Operating timesAverage time for Us controlIn ACIn ACClosing NOmin ms 12 max ms 28Opening NOmin ms 828		or bold coil powered at	OUMZ		\/^	240
Dissipation at holding ≤20°C 50Hz Max cycles frequency Mechanical operation Cycles/h 3600 Operating times Average time for Us control in AC Closing NO min ms 12 max ms 28 Opening NO min ms 8						
Max cycles frequency Mechanical operation cycles/h 3600 Operating times Average time for Us control in AC Closing NO min ms 12 max ms 28 Opening NO min ms 8	Distance	<00°0 F011-		nolaing		
Mechanical operation cycles/h 3600 Operating times Average time for Us control in AC Closing NO min ms 12 max ms 28 Opening NO min ms 8		≤∠U°C 5UHZ			VV	5
Operating times Average time for Us control in AC Closing NO min ms 12 max ms 28 Opening NO min ms 8					, ,	2000
Average time for Us control in AC Closing NO min ms 12 max ms 28 Opening NO min ms 8					cycles/h	3600
in AC Closing NO min ms 12 max ms 28 Opening NO min ms 8						
Closing NO min ms 12 max ms 28 Opening NO min ms 8	Average time for Us co					
min ms 12 max ms 28 Opening NO min ms 8		in AC				
max ms 28 Opening NO min ms 8			Closing NO			
Opening NO min ms 8					ms	
min ms 8				max	ms	28
			Opening NO			
max ms 22			. •			



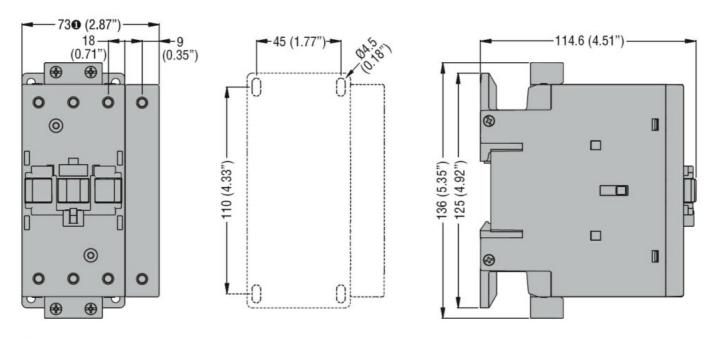


FOUR-POLE CONTACTOR, IEC OPERATING CURRENT ITH (AC1) = 90A, AC COIL 60HZ,

	in DC				
	Closing NO			40	
		min	ms	40	
	0 : 10	max	ms	85	
	Opening NO			0.0	
		min	ms	20	
III ta abada al alata		max	ms	55	
UL technical data	altana AC (III)		\/	000	
Rated operational v			V	600	
Full-load current (FI	_A) for three-phase AC motor	-1.400\/		50	
		at 480V	A	52	
Violation of a closely		at 600V	Α	41	
Yielded mechanical					
	for single-phase AC motor	440/4001	LID	F	
		110/120V	HP	5	
	for three where AO meets	230V	HP	10	
	for three-phase AC motor	000/0001	LID	4.5	
		200/208V	HP	15	
		220/230V	HP	20	
		460/480V	HP	40	
0		575/600V	HP	40	
General USE	Ocarto stan				
	Contactor	A.C. augmant	۸	00	
Chart sire it protect	ion from COOV	AC current	Α	90	
Short-circuit protect					
	High fault	Object singuit summent	1. 0	400	
		Short circuit current	kA	100	
		Fuse rating	Α	150	
	Chan dougl for the	Fuse class			
	Standard fault	Short circuit current	IcΛ	E	
			kA ^	5	
		Fuse rating Fuse class	Α	150 RK5	
Ambient conditions		ruse cidss		INNO	
Temperature			_		
remperature	Operating temperature				
	Operating temperature	min	°C	-50	
		max	°C	-50 70	
	Storage temperature	IIIdX		10	
	Giorage temperature	min	°C	-60	
		max	°C	80	
Max altitude		IIIdX	m	3000	
Resistance & Protection					
Pollution degree	CHOIL—			3	
Dimensions				J	
Difficholoffs					

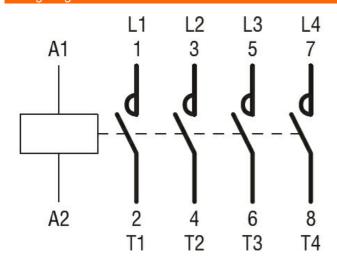
ENERGY AND AUTOMATION

FOUR-POLE CONTACTOR, IEC OPERATING CURRENT ITH (AC1) = 90A, AC COIL 60HZ, 220VAC



① BF80T2 82mm/3.23"

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

UL 60947-1

UL 60947-4-1

Certificates

CCC

cULus

ETIM classification

ETIM 8.0

EC000066 -Power contactor, AC switching