



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
	75V	Α	60



	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	Α	35
	75V	Α	30
	110V	Α	25
	220V	Α	5
IEC max current le in DC3-DC5 with L/R ≤ 15ms with 3 poles in series			
	≤24V	Α	50
	48V	Α	50
	75V	Α	45
	110V	Α	30
	220V	Α	40
IEC max current le in DC3-DC5 with L/R ≤ 15ms with 4 poles in series			
	≤24V	Α	55
	48V	Α	55
	75V	Α	55
	110V	Α	45
	220V	Α	50
Short-time allowable current for 10s (IEC/EN60947-1)		A	400
Protection fuse	0 ((=0)		400
	gG (IEC)	A	100
W. I. (DMO 1.)	aM (IEC)	Α	50
Making capacity (RMS value)		Α	500
Breaking capacity at voltage	4.63.4		400
	440V	A	400
	500V	A	352
Decision of the control of	690V	Α	312
Resistance per pole (average value)		mΩ	0.8
Power dissipation per pole (average value)	Tel.	147	0.5
	Ith	W	6.5
Tinhtonia a tanana faa tanain da	AC-3	W	2
Tightening torque for terminals			
	min	Nm	4
	max	Nm	5
	min	Ibin	2.95
Timbtoning toward for call towards	max	Ibin	3.69
Tightening torque for coil terminal		N I.a.:	0.0
	min	Nm Næ	0.8
	max	Nm	1



AWG/Kcmil Max			min	Ibin	0.8
AWG/Kcmil			max	lbin	0.74
AWG/Kcmil Piexible w/o lug conductor section Piexible w/o lug conductor section Piexible c/w lug conductor sectio	Max number of wires	simultaneously connectable		Nr.	2
Flexible w/o lug conductor section min max mm² 1.5 mmx mm² 3.5	Conductor section				
Flexible w/o lug conductor section		AWG/Kcmil			
Pictible c/w lug conductor section			max		2
Plexible c/w lug conductor section min min max min		Flexible w/o lug conductor section			
Plexible c/w lug conductor section			min	mm²	1.5
Minimate Minimate			max	mm²	35
Power terminal protection according to IEC/EN 60529 max mm² 35 Mechanical features normal allowable vertical plan ±30° Fixing 3 1240 Fixing g 1240 Conductor section max 2 Meight cycles 15000000 Conductor section max 2 Operations cycles 15000000 Mechanical life cycles 15000000 Electrical life cycles 1400000 Safety related data cycles 1400000 Performance level B10d according to EN/ISO 13489-1 rated load cycles 15000000 Mirror contats according to IEC/EN 609474-4-1 yes 5 EMC compatibility yes yes AC operating voltage of 60Hz coil powered at 60Hz pick-up min %Us 10 AC operating voltage of 60Hz coil powered at 60Hz pick-up min %Us 5 AC average coil consumption at 20°C of 60Hz coil powered at 60Hz coil powered at 60Hz pick-up in-rush voltage xu 5 AC average co		Flexible c/w lug conductor section			
Power terminal protection according to IEC/EN 60529 IP20 front Mechanical features			min	mm²	1.5
Mechanical features Operating position normal allowable a			max	mm²	35
Operating position normal allowable Vertical plan allowable ±30° Fixing Screw / DIN rail 35mm 35mm 35mm Weight g 1240 <td>Power terminal protect</td> <td>ction according to IEC/EN 60529</td> <td></td> <td></td> <td>IP20 front</td>	Power terminal protect	ction according to IEC/EN 60529			IP20 front
Normal allowable Normal 130°	Mechanical features				
Fixing Screw / DIN rail Screw / DIN rail Screw / DIN rail Smm Smm	Operating position				
Fixing Screw / DIN rail Screw / DIN rail Screw / DIN rail Smm Smm			normal		Vertical plan
Samm Weight Samm Samm			allowable		
Weight	Fixing				Screw / DIN rail
Conductor section Mackenil conductor section Mackenical life cycles 15000000 Electrical life cycles 1400000 Safety related data Performance level B10d according to EN/ISO 13489-1 rated load cycles 1400000 cycles Mirror contats according to IEC/EN 609474-4-1 yes EMC compatibility yes AC coil operating Rated AC voltage at 60Hz V 120 AC operating voltage of 60Hz coil powered at 60Hz min %Us 80 max %Us 20 Mackerage coil consumption at 20°C of 60Hz coil powered at 60Hz in-rush holding VA 210 holding VA 210 holding VA 25 Dissipation at holding ≤20°C 50Hz W 5 Max cycles frequency Mechanical operation cycles/h 360					35mm
AWG/kcmil conductor section max 2 Operations Mechanical life cycles 15000000 Electrical life cycles 1400000 Safety related data Performance level B10d according to EN/ISO 13489-1 Fated load cycles 1400000 mechanical load cycles 15000000 Mirror contats according to IEC/EN 609474-4-1 EMB Compatibility yes AC coll operating of 60Hz coil powered at 60Hz pick-up min will wills 80 max wills 110 drop-out min wills 80 max wills 110 AC average coil consumption at 20°C of 60Hz coil powered at 60Hz Dissipation at holding ≤20°C 50Hz Max cycles frequency Mechanical operating Mechanical operating Mechanical operation cycles/h 3600 Operating times	Weight			9	1240
Max Z Operations Mechanical life cycles 15000000 Electrical life cycles 1400000 Safety related data Performance level B10d according to EN/ISO 13489-1 rated load cycles 1400000 mechanical load cycles 15000000 Mirror contats according to IEC/EN 609474-4-1 yes yes EMC compatibility yes yes AC coil operating V 120 AC operating voltage min %Us 80 AC operating voltage min %Us 80 drop-out min %Us 80 drop-out min %Us 55 AC average coil consumption at 20°C of 60Hz coil powered at 60Hz in-rush holding VA 210 Dissipation at holding ≤20°C 50Hz W 5 Max cycles frequency yes 5 Mechanical operation cycles/h 3600	Conductor section				
Operations Mechanical life cycles 15000000 Electrical life cycles 1400000 Safety related data Performance level B10d according to EN/ISO 13489-1 rated load mechanical load cycles 1400000 mechanical load cycles 1400000 mechanical load cycles 15000000 Mirror contats according to IEC/EN 609474-4-1 yes EMC compatibility yes AC coil operating V 120 AC operating voltage yick-up min		AWG/kcmil conductor section			
Mechanical life cycles 15000000 Electrical life cycles 1400000 Safety related data rated load reprintmental load			max		2
Electrical life cycles 140000 Safety related data Performance level B10d according to EN/ISO 13489-1 rated load cycles 1400000 mechanical load cycles 15000000 Mirror contats according to IEC/EN 609474-4-1 EMC compatibility yes AC coil operating Rated AC voltage at 60Hz AC operating voltage of 60Hz coil powered at 60Hz pick-up min wus 80 max wus 110 drop-out min wus 55 AC average coil consumption at 20°C of 60Hz coil powered at 60Hz of 60Hz coil powered at 60Hz pick-up min wus 55 AC average coil consumption at 120°C of 60Hz coil powered at 60Hz in-rush holding VA 210 holding VA 15 Dissipation at holding ≤20°C 50Hz Max cycles frequency Mechanical operation cycles/h 3600 Operating times	Operations				
Safety related data Performance level B10d according to EN/ISO 13489-1 rated load mechanical load cycles of 1400000 mechanical load cycles of 15000000 1400000 mechanical load cycles of 15000000 Mirror contats according to IEC/EN 609474-4-1 yes EMC compatibility yes AC coil operating V 120 Rated AC voltage at 60Hz V 120 AC operating voltage 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 holding VA 210 holding Dissipation at holding ≤20°C 50Hz W 5 Max cycles frequency Mechanical operation cycles/h 3600 Operating times	Mechanical life			cycles	15000000
Performance level B10d according to EN/ISO 13489-1 rated load mechanical load cycles 1400000 mechanical load 1400000 cycles 15000000 Mirror contats according to IEC/EN 609474-4-1 yes EMC compatibility yes AC coil operating V 120 Rated AC voltage at 60Hz V 120 AC operating voltage 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 in-rush holding VA 210 holding VA 15 Dissipation at holding ≤20°C 50Hz W 5 Max cycles frequency Mechanical operation cycles/h 3600	Electrical life			cycles	1400000
rated load mechanical load cycles volume 1400000 volume Mirror contats according to IEC/EN 609474-4-1 yes EMC compatibility yes AC coil operating V 120 Rated AC voltage at 60Hz V 120 AC operating voltage min %Us 80 max %Us 110 drop-out Min wax %Us 110 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 W 5 Max cycles frequency cycles/h 3600 Mechanical operation cycles/h 3600	Safety related data				
Mirror contats according to IEC/EN 609474-4-1 yes EMC compatibility yes AC coil operating V 120 Rated AC voltage at 60Hz V 120 AC operating voltage min %Us 80 max %Us 110 drop-out 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 W 5 Max cycles frequency W 5 Mechanical operation cycles/h 3600	Performance level B1	0d according to EN/ISO 13489-1			
Mirror contats according to IEC/EN 609474-4-1 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 in-rush VA 210 holding VA 15 Dissipation at holding ≤20°C 50Hz Mechanical operation Operating times yes yes yes AC 20 yes AC 20 110 120 AC 20 AC			rated load	cycles	1400000
EMC compatibility yes AC coil operating Rated AC voltage at 60Hz 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 Mechanical operation Cycles/h 3600 Operating times			mechanical load	cycles	15000000
AC coil operating Rated AC voltage at 60Hz V 120 AC operating voltage min %Us 80 max %Us 110 max %Us 110 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 W 5 Max cycles frequency Mechanical operation cycles/h 3600 Operating times	Mirror contats accord	ing to IEC/EN 609474-4-1		-	yes
AC coil operating Rated AC voltage at 60Hz V 120 AC operating voltage min %Us 80 max %Us 110 max %Us 110 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 W 5 Max cycles frequency Mechanical operation cycles/h 3600 Operating times	EMC compatibility	-			yes
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 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					
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		60Hz		V	120
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					
pick-up min %Us 80 max %Us 110 Morp-out min %Us 20 max %Us 55 Max cycles frequency W 5 Max cycles/h 3600 Operating times Morp More was Morp	, 5 9 -	of 60Hz coil powered at 60Hz			
min %Us 80 max %Us 110 drop-out min min %Us 20 max %Us 55 AC average coil consumption at 20°C of 60Hz coil powered at 60Hz in-rush holding VA 210 holding VA 15 Dissipation at holding ≤20°C 50Hz W 5 Max cycles frequency W 5 Mechanical operation cycles/h 3600 Operating times		·			
drop-out min win will will will will will will wil		10.00	min	%Us	80
drop-out min max %Us 20 max 20 max 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 W 5 Mechanical operation cycles/h 3600 Operating times					
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 W 5 Max cycles frequency Mechanical operation cycles/h 3600 Operating times		drop-out		- 	
max %Us 55 AC average coil consumption at 20°C of 60Hz coil powered at 60Hz in-rush holding VA 210 holding Dissipation at holding ≤20°C 50Hz W 5 Max cycles frequency W 5 Mechanical operation cycles/h 3600 Operating times		-r	min	%Us	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					
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	AC average coil cons	umption at 20°C			
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	J	•			
holdingVA15Dissipation at holding ≤20°C 50HzW5Max cycles frequencyStreet of the cycles/h3600Mechanical operationCycles/h3600Operating times		2. 23. 12 33 po 3 at 30. 12	in-rush	VA	210
Dissipation at holding ≤20°C 50Hz W 5 Max cycles frequency Mechanical operation cycles/h 3600 Operating times					
Max cycles frequency Mechanical operation cycles/h 3600 Operating times	Dissipation at holding	≤20°C 50Hz	110101119		
Mechanical operation cycles/h 3600 Operating times				**	
Operating times				cycles/h	3600
				0,0100/11	
		control			

in AC

Closing NO

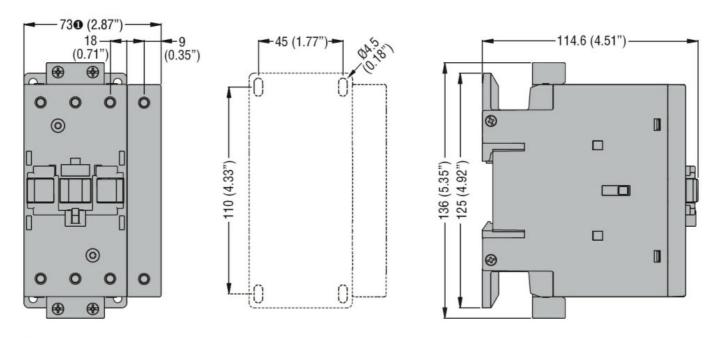




		min	ms	12
		max	ms	28
	Opening NO			
		min	ms	8
		max	ms	22
	in DC			
	Closing NO			
		min	ms	40
		max	ms	85
	Opening NO			
		min	ms	20
		max	ms	55
UL technical data				
Full-load current (FLA	a) for three-phase AC motor			
		at 480V	Α	52
		at 600V	Α	41
Yielded mechanical p				
	for single-phase AC motor			
		110/120V	HP	5
		230V	HP	10
	for three-phase AC motor			
		200/208V	HP	15
		220/230V	HP	20
		460/480V	HP	40
		575/600V	HP	40
General USE				
	Contactor			
		AC current	Α	90
Short-circuit protection				
	High fault			
		Short circuit current	kA	100
		Fuse rating	Α	150
		Fuse class		J
	Standard fault			
		Short circuit current	kA	5
		Fuse rating	Α	150
		Fuse class		RK5
Ambient conditions				
Temperature				
	Operating temperature			
		min	°C	-50
		max	°C	70
	Storage temperature			
		min	°C	-60
		max	°C	80
Max altitude			m	3000
Resistance & Protect	ion			
Pollution degree				3
Dimensions				

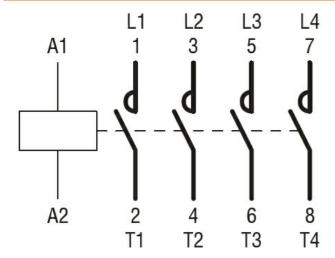
ENERGY AND AUTOMATION

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



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