



Product designation

Power contactor

Product type designation

BF50

Contact characteristics

Number of poles	Nr.	4
Rated insulation voltage U_i IEC/EN	V	1000
Rated impulse withstand voltage U_{imp}	kV	8
Operational frequency	min	Hz 25
	max	Hz 400
IEC Conventional free air thermal current I_{th}	A	90
Operational current I_e	AC-1 ($\leq 40^\circ\text{C}$)	A 90
	AC-1 ($\leq 55^\circ\text{C}$)	A 75
	AC-1 ($\leq 70^\circ\text{C}$)	A 65
	AC-3 ($\leq 440\text{V } \leq 55^\circ\text{C}$)	A 50
	AC-4 (400V)	A 28
Rated operational power AC-1 ($T \leq 40^\circ\text{C}$)	230V	kW 34
	400V	kW 59
	500V	kW 74
	690V	kW 102
IEC max current I_e in DC1 with $L/R \leq 1\text{ms}$ with 1 poles in series	$\leq 24\text{V}$	A 45
	48V	A 40
	75V	A 40
	110V	A 8
	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 60
	48V	A 60
	75V	A 60
	110V	A 50
	220V	A 7
IEC max current I_e in DC1 with $L/R \leq 1\text{ms}$ with 3 poles in series	$\leq 24\text{V}$	A 60
	48V	A 60
	75V	A 60
	110V	A 55
	220V	A 75
IEC max current I_e in DC1 with $L/R \leq 1\text{ms}$ with 4 poles in series	$\leq 24\text{V}$	A 60
	48V	A 60
	75V	A 60
	110V	A 60
	220V	A 90

IEC max current Ie in DC3-DC5 with L/R ≤ 15ms with 1 poles in series			
≤24V	A	30	
48V	A	25	
75V	A	22	
110V	A	3	
220V	A	–	
IEC max current Ie in DC3-DC5 with L/R ≤ 15ms with 2 poles in series			
≤24V	A	35	
48V	A	35	
75V	A	30	
110V	A	25	
220V	A	5	
IEC max current Ie in DC3-DC5 with L/R ≤ 15ms with 3 poles in series			
≤24V	A	50	
48V	A	50	
75V	A	45	
110V	A	30	
220V	A	40	
IEC max current Ie in DC3-DC5 with L/R ≤ 15ms with 4 poles in series			
≤24V	A	55	
48V	A	55	
75V	A	55	
110V	A	45	
220V	A	50	
Short-time allowable current for 10s (IEC/EN60947-1)		A	400
Protection fuse			
	gG (IEC)	A	100
	aM (IEC)	A	50
Making capacity (RMS value)		A	500
Breaking capacity at voltage			
	440V	A	400
	500V	A	352
	690V	A	312
Resistance per pole (average value)		m?	0.8
Power dissipation per pole (average value)			
	Ith	W	6.5
	AC3	W	2
Tightening torque for terminals			
	min	Nm	4
	max	Nm	5
	min	lbin	2.95
	max	lbin	3.69
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		2
Flexible w/o lug conductor section			
	min	mm ²	1.5

		max	mm²	35
Flexible c/w lug conductor section		min	mm²	1.5
		max	mm²	35
Power terminal protection according to IEC/EN 60529				IP20 front
Mechanical features				
Operating position		normal allowable	Vertical plan ±30°	
Fixing				Screw / DIN rail 35mm
Weight			g	1240
Conductor section		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		rated load mechanical load	cycles	1400000
			cycles	15000000
Mirror contats according to IEC/EN 609474-4-1				yes
EMC compatibility				yes
AC coil operating				
Rated AC voltage at 60Hz			V	48
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 holding	VA	210
			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
		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) for three-phase AC motor

at 480V	A	52
at 600V	A	41

Yielded mechanical performance

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	A	90
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Short-circuit protection fuse, 600V

High fault

Short circuit current	kA	100
Fuse rating	A	150
Fuse class		J

Standard fault

Short circuit current	kA	5
Fuse rating	A	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

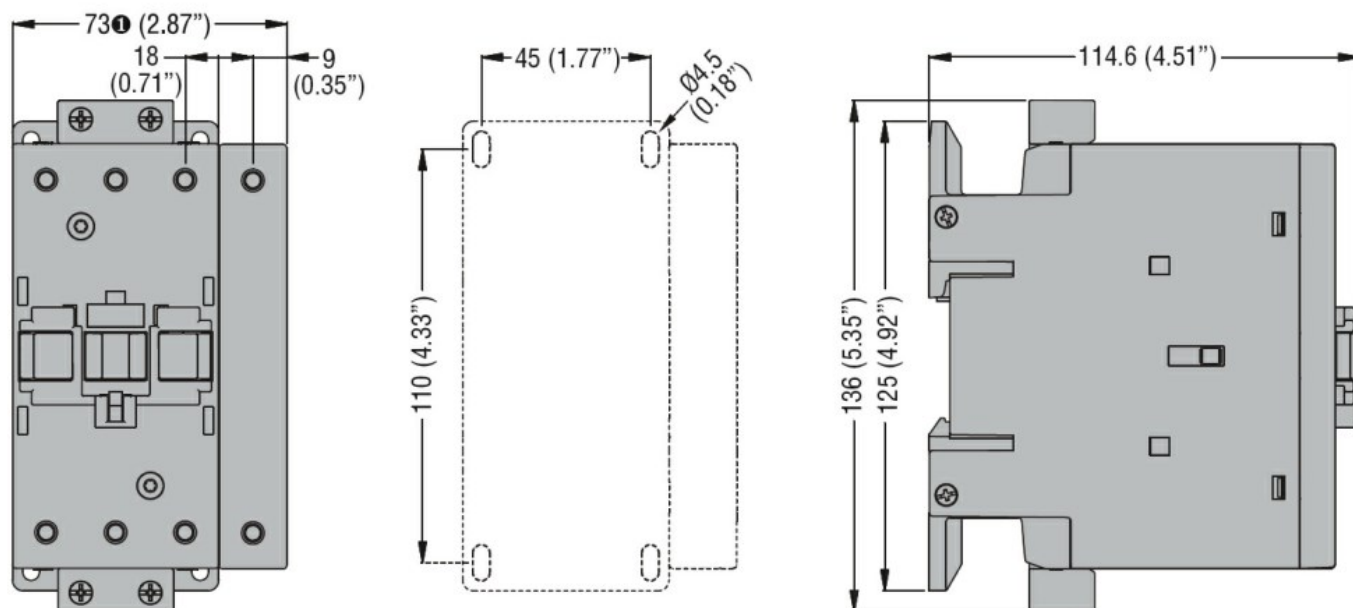
m	3000
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Resistance & Protection

Pollution degree

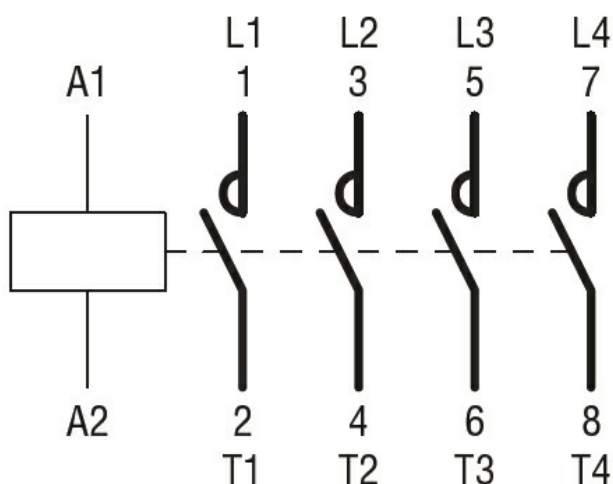
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Dimensions



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 60947-1
IEC/EN 60947-4-1
UL 60947-1
UL 60947-4-1

Certificates

CCC
cULus

ETIM classification

ETIM 8.0

EC000066 -
Power contactor,
AC switching