



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 current AC-3 ($T \leq 55^\circ\text{C}$)	230V	A 50
	400V	A 50
	415V	A 50
	440V	A 50
	500V	A 44
	690V	A 39
	1000V	A 23
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 Ie in DC1 with L/R ≤ 1ms with 4 poles in series			
	≤24V	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)		mΩ	0.8
Power dissipation per pole (average value)			
	Ith	W	6.5
	AC-3	W	2
Tightening torque for terminals			
	min	Nm	4
	max	Nm	5
	min	Ibin	2.95
	max	Ibin	3.69
Tightening torque for coil terminal			
	min	Nm	0.8
	max	Nm	1

		min	I _{bin}	0.8
		max	I _{bin}	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	mm ²	35
Flexible c/w lug conductor section		min	mm ²	1.5
		max	mm ²	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
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
EMC compatibility				yes
AC coil operating				
Rated AC voltage at 50/60Hz			V	48
AC operating voltage	of 50/60Hz coil powered at 50Hz			
	pick-up	min	%U _s	80
		max	%U _s	110
	drop-out	min	%U _s	20
		max	%U _s	55
	of 50/60Hz coil powered at 60Hz			
	pick-up	min	%U _s	85
		max	%U _s	110
	drop-out	min	%U _s	40
		max	%U _s	55
AC average coil consumption at 20°C	of 50/60Hz coil powered at 50Hz			
		in-rush	VA	210
		holding	VA	15
	of 50/60Hz coil powered at 60Hz			
		in-rush	VA	195
		holding	VA	13
	of 60Hz coil powered at 60Hz			
		in-rush	VA	210

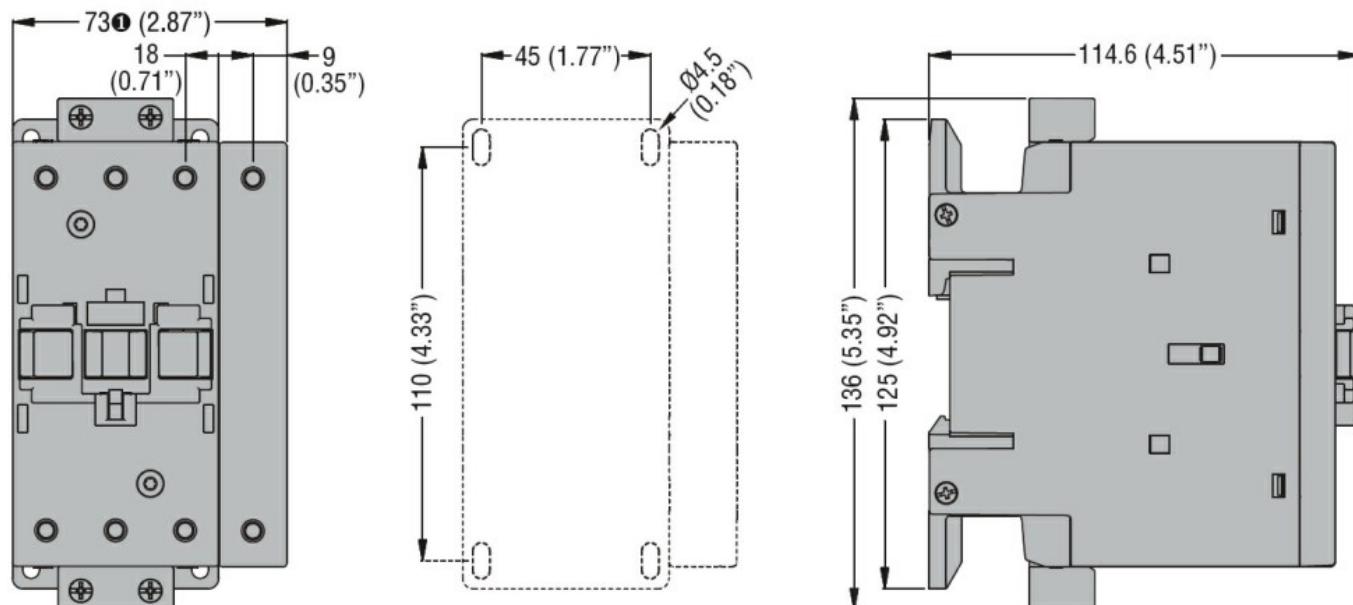
		holding	VA	15
Dissipation at holding ≤20°C 50Hz			W	5
Max cycles frequency				
Mechanical operation			cycles/h	3600
Operating times				
Average time for Us control				
in AC				
Closing NO		min	ms	12
		max	ms	28
Opening NO		min	ms	8
		max	ms	22
in DC				
Closing NO		min	ms	40
		max	ms	85
Opening NO		min	ms	20
		max	ms	55
UL technical data				
Rated operational voltage AC (UL)			V	600
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
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

Resistance & Protection

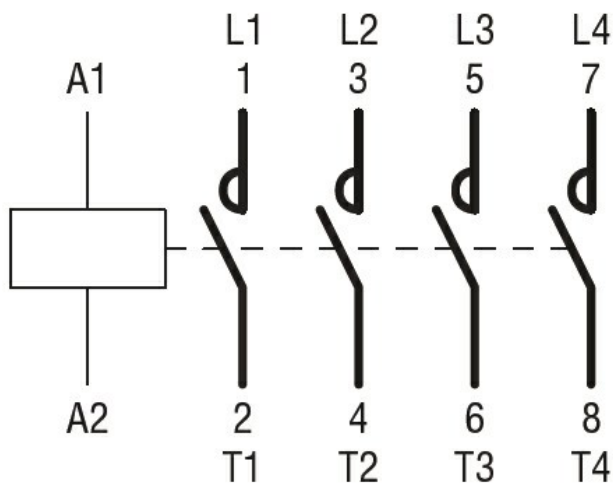
Pollution degree 3

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/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